

SECTION II.

JAYAWIJAYA WATCH PROJECT

PROGRAMS & ACTIVITIES

1. MATERNAL AND INFANT HEALTH PROGRAM

To ensure the effective delivery of formal health system services.

1.1 WAMENA NURSING SCHOOL (SPK) CAPACITY BUILDING

To increase the number and improve the effectiveness of trained nurses graduating from the SPK in Wamena.

When WATCH began the main factor limiting the institutional capacity of the Jayawijaya District Health Service was the severe shortage of adequately trained nursing personnel (especially female nursing personnel) who are willing to serve in remote health centres and sub-health centres across Jayawijaya District. To address this problem, WATCH worked to increase the capacity of the existing nursing school (SPK) in Wamena. Assistance extended to the Wamena SPK included the upgrading of infrastructure, the provision of new equipment and teaching aids, and the improvement of teaching methods and curricula.

Improving the skills of SPK students was a good investment because as they are the future health workers, it will ultimately lift the standards of health services in Jayawijaya. Moreover increasing the number of women students will help to improve the health status of women and children since that it is more appropriate for women to deliver health services to women and their children. Demolishing the old buildings to ensure the Wamena SPK did not excel the Jayapura SPK highlights that even though it appears familiar to western development planners, the culture of the national health service requires as much understanding as the culture of the local peoples.

1.1.1 SPK INFRASTRUCTURE DEVELOPMENT

- Upgrade the infrastructure/buildings at the existing Wamena SPK

In WATCH I it was planned that the building infrastructure at the Wamena SPK would be upgraded by constructing three new classrooms and a 48 bed dormitory to accommodate female students as well as extending the existing office and library facilities. The budgeted for these activities was \$AUD144, 000. However, in the course of construction it was found that a considerable cost

overrun would be involved if all planned construction activities were to be completed in accordance with minimum specifications, let alone to include other building innovations that project staff hoped might be included. This was due both to underestimates as to the cost of materials and also to several setbacks experienced in the course of construction.

The project hoped to have the new facilities constructed by a local (indigenous) contractor and as far as possible to have them built from local materials such as mud bricks and locally produced clay roof tiles. By doing so the project hoped both to stimulate the local economy and provide positive examples by innovating with local resources. Ultimately it proved to be not possible to award the contract to an indigenous Jayawijayan, as the only indigenous Jayawijayan building contractor was not able to do the work at that time. Instead the contract went to someone from a neighbouring island at a higher cost than had been originally budgeted for. In line with wanting to keep funds circulating within the district, WATCH employed a local company to make clay tiles for the roof. However, a long time after the expected date of production, the tiles were so irregular that WATCH had to abandon the idea and buy iron sheeting instead. The Project Manager had an interesting suggestion that costs could be cut by building part of the SPK from mudbricks and this would also act as a learning exercise for CD workers. Even though this was not done the trialing of clay roof tiles demonstrated that AusAID and the PM were very flexible by always looking for alternative options.

The budgetary shortfall for these activities was ultimately resolved in two ways. Firstly, the building plans were cut down so that in the end, no office or library was built. Secondly, WVII provided bridging funding to the project until WATCH could organise another source of contingency funding through AusAID. Another financial problem emerged relating to who would bear responsibility for maintenance costs for the new buildings. There was no funding for maintenance allocated in the project budget, the DHO felt that this was not their responsibility, the DHS budget was already hopelessly over-stretched and the builders only offered a three month warranty on their work. In the end this responsibility reluctantly fell into the hands of the SPK administration which in turn receives its funding via the DHS budget. This problem is related to the disjunction, which exists between the policy making (DOH) and implementing (HS) arms of the MOH¹. As such this type of issue cannot be easily resolved by an external body such as WATCH.

The buildings were opened on the 8th of April 1993, however the new dormitory wasn't occupied until several months later. This was due to the fact that the electricity company were too busy to connect the power to the new buildings. Aside from the problem with lack of electricity, there was a further difficulty. Because there was no fence surrounding the far side of the SPK property it was not deemed suitable for girls to inhabit. WATCH therefore had to provide further assistance with the construction of a fence. WATCH's goal of increasing the number of female students attending the

¹ Refer to Section I/ 1.6.1 for a more detailed description of the MOH, DOH and HS and the disjunction which occurs between these bodies.

SPK was quickly realised with the percentage of female students enrolled at the SPK rising from 46.9% of the intake in 1992-1993 to 64% for 1993-1994.

When it was finally used, the dormitory was filled with 90 students even though the actual capacity is 48. It was fortunate that the dormitory came to be used by more people than was predicted as this offset a major setback that the project design could not have accounted for. After the new buildings were in place, the SPK administration decided to demolish the older dormitories. This of course undermined the aim of accommodating many more students. The apparent reason for the demolition of the old buildings is that if they were to remain, Wamena would have a larger facility than the SPK in Jayapura and that would be incongruous within the GOI's status system. It seems likely that the issue of increased maintenance costs was also a factor affecting the decision to demolish some of the older buildings. On the positive side, once the dust finally settled around the SPK there was still a considerable increase in the building infrastructure available as several of the original buildings were preserved and were used to create more space for the midwifery training facilities.

Improving the SPK infrastructure should be a reminder of just how difficult it is to estimate costs in remote areas like Jayawijaya. The initial underestimation of material costs is not surprising given the dependency of the local economy upon goods brought in by air and the fact that demand for such imported manufactured goods in Wamena generally exceeds supply. Although the GOI had subsidies on a range of essential commodities, such as basic foodstuffs and fuel and cement, these subsidies could not alleviate problems with high transportation costs and bottlenecks between Jayapura and Wamena which gave established local traders considerable leverage over the price of material goods. Such an economic climate not only makes it more difficult to accurately plan budgets but also encourages an attitude where government planners will not even try too hard to get it right in the first place. Moreover, during the first planning trip, the project designers sought the advice of missionary development workers. In line with their CD principles, missionary development workers tend to assess building costs based on their experience with using community labour. Building the SPK with community labour was not feasible for WATCH because as it was a school it had to meet government procedures and standards. Therefore project staff were compelled to contract a registered building company.

**1.1.2 / 1.1.3 CURRICULA DEVELOPMENT, TEACHING METHODS
& ONGOING SUPPORT FOR THE SPK**

- Work with staff of the Wamena SPK on assessing resource needs, curricula development and improved teaching methods.
- Provide ongoing support, advice and assistance to the Wamena SPK

Local Curricula Development

Another means of improving the quality of nurses at the SPK was the development of a locally loaded curriculum. Whilst the SPK curricula is set to a national standard by the DOH in Jakarta there is a small amount of licence afforded to provinces and districts to alter or introduce more locally relevant materials into the curriculum. WATCH encouraged the SPK staff and administration to increase the locally relevant content into the curriculum and thus alter its focus. WATCH staff also provided technical support in developing the new local curriculum that was first used in July 1992. Although the curriculum could have been more radical in content, it was a big improvement on the previous national curriculum. WATCH also assisted the SPK staff in conducting an initial evaluation of success of the modified curriculum. This was done one year after the new curriculum was introduced and used knowledge retention scores of SPK students as an indicator of the efficacy of the new materials. Throughout the rest of the WATCH project staff also continued to encourage SPK staff to continually revise and improve the local curriculum content and supported such revisions through providing access to new ideas and experiences as well as teaching assistance.

Teaching Methods

WATCH personnel experienced some resistance from the SPK administration and staff to their formal attempts to improve teaching methods. However SPK administrators were keen for WATCH staff to implement the new curriculum and although there was no funds set aside for this WATCH agreed to this. The staff considered teaching students at the SPK as an opportunity to ensure that the new curriculum would be effective as well as to promote new teaching methods and foster new skills amongst the teaching staff at the Wamena SPK. As the development of human resources within the SPK was valued, up until the end of the project WATCH personnel provided regular teaching support in the Wamena SPK. WATCH personnel were also requested to train SPK students in gender analysis and the relationship between gender problems and health problems in Jayawijaya. .

In addition, during WATCH I and II the Monev Coordinator along with other staff provided training for SPK staff in computer operation. WATCH staff also prepared some simple training materials to help SPK staff familiarise themselves with basic word processing, spread sheet and database applications.

During WATCH II the project staff sent SPK staff on training and exposure trips to enrich the human resources in the SPK. In 1994, 1995 and 1996 a total of six Wamena SPK staff went to Java on three separate trips. They journeyed to Jakarta, Bogor, Bandung, Malang, and Semarang to visit nursing schools and learn about new teaching and learning methods. Moreover in 1995 a midwife and a nurse were sent to Jayapura to attend an HIV/AIDS health education course run by PATH.

1.1.4 EQUIPMENT AND MATERIALS

- Provide additional equipment and teaching materials to the Wamena SPK.

After conducting an assessment of the resource needs of the Wamena SPK, WATCH provided a range of equipment and materials. These included a computer and software, books, a solar powered slide machine, sets of slides and a childbirth simulation model.

1.1.5 TRAINING OF SPK STUDENTS AS DATA COLLECTORS

During WATCH II and III a number of final year SPK students were selected and trained to assist with conducting the annual project surveys. These capacity-building activities created opportunities for students to participate in practical field data collection and be trained in sampling, data collection and analysis techniques. As these activities were principally implemented under the monitoring and evaluation program, they have been described in detail under that section (refer to Section II / 6.2).

1.2 HEALTH WORKER CORRESPONDENCE COURSES

(DIKSWA-PENDIDIKAN SWAKARSA)

- To enhance and improve the government correspondence courses for health workers seeking to upgrade their skills and qualifications.

As was mentioned earlier (see Section I / 1.15) as mission presence in Jayawijaya began to decrease and the capacity of the government grew, the government gradually took over responsibility for administering health centres and aid posts across Jayawijaya. This caused some problems in relation to former mission health personnel, many of whom had received good training and extensive experience but could not be employed by the health service due to their lack of formally recognised qualifications. In order to overcome this problem the Provincial Health Office had been working in conjunction with the Bethesda Health Foundation to provide correspondence training for former mission health workers who wished to formalise or upgrade their qualifications. These correspondence training courses were made possible by the existence of printed modules that can be sent out to students. Students are expected to work through these modules and also to be involved in tutor-guided groups in the health centres on as regular a basis as is possible. At times students could also come to Wamena for intensive training in the modules. In 1991 there were as many as 600 mission trained nursing aids who were eligible to participate in the correspondence training program.

During WATCH I a variety of activities was undertaken in order to support these correspondence courses. These activities included training trainers to be correspondence tutors, provided support and supervision for tutors and students in the field, subsidising the review of existing correspondence materials and the production of further correspondence training modules and well as the printing and distribution of these materials. Bethesda created most of these materials as they already had the skills and experience. The new modules contained information about acute respiratory

infections, malaria, diarrhoea, nutrition, immunisation and low birth weight. WATCH also subsidised the purchase of materials by creating some materials for teaching students and sold them at half price to YKB. YKB also created some materials. Moreover they established a revolving fund for the purchase of teaching aids in order to make the activities more sustainable. A revolving fund was established so that tutors could draw from it for the purchase of teaching aids and materials and repay the money once they have been reimbursed by their students. The activities relied on the Bethesda Health Foundation (YKB) as they had the personnel to coordinate the course and create learning resources, as well as a venue (the Bethesda Training Centre in Wamena) and adequate accommodation to cater for students when they came to Wamena.

1.3 IMMUNISATION PROGRAM

- To extend the coverage of immunisation for children under one with the measles, BCG (Tuberculosis), hepatitis B, Polio & DPT (diphtheria, pertussis and tetanus) vaccines and for women of child bearing age, between 15-34, with the tetanus toxoid vaccine.

During WATCH I the project provided three long-life and low maintenance solar refrigerators to the remote areas of Ninia, Kobakma and Borme improving the Department of Health's available cold chain facility. The project has also provided 100 backpack vaccine carriers. The backpack design, which was sourced from the Philippines, is an improvement on the more standard hand held carriers as the latter are not practical for travelling long distances in the rugged highlands region. In line with the project's objective, 5 vaccinators from each puskesmas were trained over five days in immunisation procedures, record keeping and vaccination coverage assessments.

There was a delay in actually immunising women and children since the vaccinators had to wait for the revised program to analyse data to be created to determine the coverage levels in Jayawijaya. Delays for these sorts of reasons are characteristic of integrated development projects. Aside from this there were a few other setbacks such as troubles in communicating with cold-chain companies to get the equipment and the time in 1997 when the cold chain stopped in Koropun as a result of micro-hydro failure.

During WATCH II immunisation activities were formally dropped from the program. However, WATCH personnel did continue to supervise the implementation of immunisation activities in the course of supervising other *puskesmas* activities.

In WATCH III it was planned to immunise at the least 376 children in Kanggime and 272 in Kembu/Mamit. During 1999-2000 staff at the Kanggime *puskesmas* did not conduct any child immunisation activities. In Mamit on the other hand child immunisation activities proceeded well and health centre staff were able to exceed the project's target for all immunisations except measles. In Kanggime the breakdown in the child immunisation program seems to be caused by a dispute between

the DHO and health workers staff about the distribution of the immunisation operational fund. There was also a breakdown in the cold chain in Kanggime in 1998. *The failure of cold-chain equipment is potentially very serious as vaccines are ineffective if they are given at the wrong temperature. This can have long term repercussions for if people come to believe vaccines are ineffective people may reject being immunised and more generally, western medicine may lose credibility.*

Given the fact that resources for conducting immunisation activities in Jayawijaya are extremely limited, greater attention should be paid to what types of diseases are being vaccinated against and whether the diseases indeed exist or represent a considerable health risk. However, as immunisation priorities for the entire nation are set by the DOH in Jakarta, WATCH was not in a position to alter the scope of the immunisation campaigns being carried out in Jayawijaya.

Difficulties can emerge when project outcomes are reliant upon a third organisation to implement the program. In the case of the immunisation activities, WATCH was reliant upon the DHS to execute their immunisation campaign and the DHS clearly lacked the will and the capacity to effectively run the immunisation program properly. Not only were there logistical problems (relating to an inconsistent supply of vaccines and break downs in the cold chain) but the DHS was poor in supervising and holding authority over village level immunisation campaigns. There was also a problem with DHS staff not understanding the importance of keeping vaccines cool. These factors impacted on the success of WATCH's immunisation program.

1.4 MATERNAL HEALTH PROGRAM

- To enhance maternal health programs undertaken in Jayawijaya and reduce infant and maternal morbidity and mortality

As part of the goal to improve maternal health in Jayawijaya WATCH were committed to increasing the number of and the qualifications of nurses, mantris / nursing aides, TBAs and auxiliaries (cadres) through organising regular in service training events. The location, curricula and number of participants of these sessions were determined by the government and missions. Sometimes workshops were specific such as when WATCH educated eleven cadres about malaria and at other times training sessions were broad such as when many TBAs were trained in general postnatal and antenatal care. Sometimes training was held in villages and at other times health personnel met in Wamena. Some sessions had homogenous groups attend, such as 'new TBAs' at other times broad sections of the health worker community including doctors, NGO health workers, nurses and DHO staff members worked together.

Aside from training, WATCH initiated several other activities to directly improve maternal health. During WATCH III they distributed iron supplements (see Section II / 2.5), worm tablets and malaria prophylaxis tablets (see section II / 2.2) to pregnant women. They also created several useful

materials to help the planning and prioritisation of TBAs and midwives. Pocket charts were designed to store the health cards of pregnant women. This very popular and useful innovation allowed health workers to more easily tell when pregnant women are due for a checkup. Also in WATCH III staff produced calendar planners that had reminders for important tasks written on them developed.

Traditional Birth Attendants (TBAs) & Midwives

The WATCH project was responsible for training around 340 TBAs in antenatal delivery and postnatal care. In 1993 WATCH personnel spent two weeks in Kobakma training 20 new TBAs. An evaluation of these training sessions highlighted the difficulty that most TBAs had with using the nationally prescribed Home Based Mothers Record. Project staff responded early in the project by producing a simpler record for TBAs to use. In 1992 and 1993 the Health Coordinator gave week long refresher training courses for 284 TBAs and provided many with TBA kits. When evaluating the course it was found that many were still unclear on the correct procedures for weighing babies and recording the figures.

In WATCH II Sister Mamba Katur, a midwife from the Wantoat WATCH project in PNG, came to share her experiences of training TBAs, midwives and women in general so that they could maximise the effectiveness of the traditional birthing positions. This was an excellent consultancy as most highland women stand or squat while delivering their babies and very few health personnel are familiar with facilitating the women in these positions. This learning process went two ways as Sister Katur learned about the project's approach to health and its application of appropriate technology. Her visit was important in indirect ways too for as a highland woman who commanded respect Sister Katur was an important model for all.

There were also a number of retraining sessions for TBAs in WATCH II and III. Refresher training was a particular focus for WATCH in 1997 when 32 TBAs were retrained over three sessions. In these sessions the importance of using the flow diagrams, a partograph (a kind of chart) and the PWS (local area monitoring) records was stressed. Over the years WATCH staff have found that TBAs do not easily understand the content of these training sessions. Therefore in the last few years of the project, staff organised more regular in situ refresher training activities to take place when they visited the villages.

They also sought to use midwives as trainers, supervisors and mentors for the TBAs and therefore provided appropriate training and supervision to midwives to be able to take up such a role (see Section II / 1.6.2 for more details of midwife training).

1.5 CASE MANAGEMENT PROTOCOLS

- To develop, implement and monitor the use of protocols for the diagnosis and treatment of major illnesses / health problems occurring in Jayawijaya.

The WATCH project went further than designing case management protocols for the three most common diseases of children under five. In consultation with doctors in the district, another 30 protocols were devised. Based on information obtained from the ethnographic consultant's report, another consultant produced a case management protocol for high risk pregnancies and in December 1995, the malnutrition case management protocol was written based upon a report by the consultant Dr. Sadjimin.

The integrated case management protocols and standard treatment (ICMST) were developed with the assistance of a consultant working with the WHO in Jakarta and based on the UNICEF document 'management of childhood diseases'. All health workers were trained on using the ICMST and the project and the DHO have developed the supervision system for the ICMST. The integrated case management protocols became a key document and by late 1996 WATCH was promoting them at the provincial level, to all districts in Irian.

These protocols came to not only be used in Jayawijaya. They were taken up in Merauke and health authorities were looking at adapting them again for application in West Timor and Maluku provinces as well as in Paniai and Puncak Jaya districts. Even if they are not directly replicable, the protocols are suitable as models for the development of more protocols in other areas. Their success hinges on the protocols' simplicity of style and ability to cover a significant range of diseases. Their success was also a due to their use of appropriate local technologies which means that where possible, people can care for their health using local resources, a key feature of PHC. For instance, sweet potato flour was promoted as super-oralite. WATCH developed evaluation protocols to ensure messages understood and the Health Coordinator and District Health Officer monitored the case management protocols by sending out forms to the health centres.

Towards the end of WATCH II, many protocols were represented as flow charts. Two flow charts were developed: one for health workers/cadres and one for the communities. That appropriate idioms were used for the two versions is an instance where WATCH acknowledged the value of using different forms of communication for different audiences. These Flowing Diagrams and Standard Therapy models (as revised by Prof. Budiano Santoso) were used in WATCH's training sessions. Its effectiveness in puskesmas, pustu and BP were evaluated. There were several methods used for evaluating the CMPs. These include inviting health workers to Wamena to discuss the effectiveness of CMPs, visiting village health centres and talking to staff there and in 1997 the SPK data collectors conducted surveys in Kelila, Kurulu, Kimbim, and Kurima. Their results indicated that the use of case management protocols was limited by poor distribution of the pocket books that were needed as an accompaniment to the CMPs. Other obstacles faced by those using the models were lack of medication relevant to the standard therapy, lack of ARI timers in each BP and PUSTU, and that some of those trained by project staff had not transferred their knowledge.

During the interim extension WATCH's CMPs were taken up by a range of other health NGOs including Merlin, MSF and the ICRC and the promotion and training of health workers in how to use the CMPs continued to receive strong emphasis.

While the creation of case management protocols is commendable, their value in improving diagnosis and treatment is threatened by a lack of other resources. Indicating what drugs need to be given to patients is futile if there is a drug shortage in the villages. Similarly, there is little point clarifying when to refer a patient to a more equipped health centre when there is no adequate transport infrastructure to get the patient there. Case Management protocols cannot be effective if there is a lack of enforcement of procedures as well as resource shortages.

It is important to ensure health workers have the skills necessary to follow guidelines in the protocols. This lesson was learned during a training session where health workers were learning how to use the pneumonia flow charts. It was discovered that the participants did not have the necessary skills for counting the respiration rate of a patient. In order to standardise correct counting methods, project personnel had to overcome the lack of clocks or wrist watches in most health centres. Firstly, a type of water clock was made out of discarded infusion bottles. Although this seemed a good innovation, it ended up being less than ideal as two health workers were required to count (one to count the respiration rate and the other to operate the materials). In time the project heard about the existence of ARI timers and about 400 were ordered. After distributing them to health posts, sub-health centres and health centres a problem emerged whereby some workers were distracted by the beeping sound and would count the beeps instead of the respiration rate. Subsequently, project staff approached someone to make an ARI timer that only beeps on the minute. Based on the results of evaluations, it seemed that by ensuring health workers had the right skills to follow the guidelines in the CMPs, health workers were able to diagnose pneumonia more effectively.

1.6 IN SERVICE TRAINING

- To assist the PHO in coordinate and conducting regular in service training for doctors and other health workers.

1.6.1 ANNUAL CONFERENCE OF KEY COMMUNITY LEADERS AND HEALTH WORKER PERSONNEL

In early 1994 the project established an annual conference for key community leaders and health worker personnel. In this conference, WATCH activities and ideas were discussed and conclusions were drawn. WATCH staff also organised for broad sections of the health worker community to meet twice yearly in Wamena for in service training. NGO health workers, doctors, nurses and DHO staff were taught the most recent lessons learned from WATCH's activities as well as other information and ideas from outside the province. These ISTs were initially planned to be of two weeks duration but in

the course of the project they were dropped back to one week only as it was not considered wise to remove health personnel from their villages for too long. It has often been stated that since WATCH began, senior health personnel in the district have broadened their views of health care in health centres and posts and that health workers have learned to encourage community involvement in PHC measures. It can be deduced that the annual conference and the IST sessions guided and hopefully improved the general planning and coordination of the current (and future) health care initiatives in the district.

1.6.2 DOCTOR/MIDWIFE IN-SERVICE TRAINING

- Assist the DHO in coordinating six monthly in-service training activities for doctors and midwives from community health centres across Jayawijaya.

Since 1993 the project participated in the bi-annual Jayawijaya District Health conference. In these conferences, WATCH representatives emphasised the need to integrate the lessons they had learned and other information into current health activities. WATCH's ideas about the relationship between health and CD, and about nutrition and antenatal care also infiltrated the annual province wide training sessions for nurses and midwives in 1994, 1995 and 1996. These sessions were coordinated to coincide with pre-existing doctors' meetings so doctors would not be drawn away from their posts unnecessarily.

The IST sessions were a forum for teaching recent skills and ideas in health development as well as discussing issues that had recently arisen in the project. For instance, in 1995 the doctors of Jayawijaya refined the protocols for thirty local diseases and discussed how best to implement the HIS and to develop protocols for obstetric problems while in the mid-1996 IST, participants discussed the HIS, the necessity of integrated supervision, the evaluation of the Integrated Case Management Protocols and the training of health workers.

1.6.3 OTHER IN-SERVICE TRAINING

- Provide support for other in-service training activities at the district and provincial levels

In November 1994 the Monitoring and Evaluation Coordinator and the Gender Consultant, Helen Lok, attended the immunisation workshop for Jayawijaya District held in Wamena. At the invitation of the Counterpart Project Manager, the Gender Consultant gave a presentation to the workshop participants regarding health education and the role of community development in health prevention.

During late 1995 the WATCH staff were invited to participate in a major training workshop for midwives. The workshop was held in Jayapura and was attended by 256 recently graduated midwives from all over Irian Jaya. WATCH's contributions to this workshop included: collaborating

with the PHO to produce a booklet on hypothermia for use in the workshop, training the participants in how to assist deliveries using a squat position (with assistance from Sister Mamba Katur from the Wantoat WATCH Project in PNG (see section II / 1.4), training the participants in how to make and/or use a range of appropriate technology aids such as water heaters, traditional medicines, lorena stoves, efficient cooking pots and sanitation technologies (in collaboration with YPMD), and training the participants in preparing and using weaning food and super-oralite from sweet potatoes.

During late 1995 the project sent two people from the DHS, a midwife and a male nurse, to Jayapura to attend a training course in HIV/AIDS prevention run by PATH. On their return they were expected to begin AIDS awareness campaigns in Jayawijaya District. Another in service training event was in late 1995 when WATCH staff ran a 7 day training workshop that was attended by 46 midwives from Jayawijaya. Training during this workshop covered the use of the HIS, high-risk case management and the use of CMPs for the 30 most common diseases in Jayawijaya District.

1.7 MANTRIS AND PEER TRAINERS

- To train mantris and other selected government and mission health workers as peer trainers for other health workers and the broader community.

By training mantris and other respected health workers as trainers and encouraging them to take a greater role in training and supervising village level health workers the project sought to both directly improve the skills of mantris and to indirectly raise the skills and comprehension of health issues throughout the broader community.

1.7.1 SELECTION OF PEER TRAINERS

- Assist Health Centre staff and communities in selecting appropriate peer trainers from existing Government and Mission health worker personnel.

To facilitate further training for health cadres and to conduct health education campaigns throughout the broader community, WATCH acted to strengthen the role of mantris (nursing aides) and other government and mission health workers as peer trainers. Mantris were particularly targeted to become peer trainers because of the high degree of status and respect that many enjoy in their communities. Yet in recognition of the fact that in some areas there either was no mantri or else the mantri was generally respected or diligent the role of peer trainer was open to people other than mantris.

1.7.2 TRAINING FOR MANTRIS AND PEER TRAINERS

In WATCH I and III over 100 mantri's and a few other relevant persons were trained as peer trainers. In April 1993 119 mantris were trained for seven days at YKB in Wamena on how to train other health workers on ARI, malaria, low birth weight, immunisation, diarrhoea, nutrition and how to report using a simplified system. After that there were a further two five day long refresher training sessions for the mantris. It wasn't until June 1993 that a protocol for supervising mantri's was developed which made the training sessions more tailored to the mantri's strengths and weaknesses. In WATCH III the training of mantris was again prioritised but this time the training material was more specific. There were sessions organised that trained the mantri's to use the CMPs & BCGs as well as to train them (along with midwives) in Haemoglobin testing. *An issue that was ever present when training mantris was to take care to not raise their expectations that although they were receiving extra training they would not necessarily become salaried government workers.*

2. VILLAGE LEVEL HEALTH PROMOTION AND PREVENTION PROGRAM

- To develop the capacity within Jayawijaya to extend the coverage of village based health care programs affecting women and their children's health

The activities in the maternal and infant health program primarily targeted formal health workers that were employed by the government and missions. The activities in the village level health promotion and prevention program targeted the broader community.

2.1 PREVENTATIVE CHILD HEALTH PROGRAM

- To raise local awareness of preventative health strategies

There were many dimensions to the preventative child health activities instituted by WATCH. These included: to understand local medical belief systems, to train village level health workers and prepare new information, education and communications (IEC) media, to educate target communities in simple health messages, and to encourage the use of sweet potato flour as superoralite. These dimensions were executed simultaneously and were reliant upon one another for their success.

2.1.1 RESEARCH INTO LOCAL MEDICAL BELIEF SYSTEMS

During WATCH I there were no specific activities relating to the investigation of local health beliefs. Instead it was felt that field staff would be able to collect adequate information on their fieldtrips. This proved to be somewhat unrealistic as field staff weren't trained in medical anthropology and cross-cultural skills and they were very busy with trying to implement the project design. The problem with the lack of adequate anthropological data for tailoring health messages and

activities became apparent to WATCH staff in the course of their duties and was highlighted in the WATCH review.

There was a greater ethnographic emphasis in the second phase of WATCH. First, Dr Maria from Universitas Indonesia was invited to introduce the discipline of medical anthropology to doctors and health workers in Jayawijaya. This was followed up by two ethnographic studies. The first was done over two weeks in January 1995. Two teams under the guidance of an ethnographer consultant, Naniek Kasniyah from UGM, and a field assistant, Dra. Ivone Poli from UNCEN, sought to understand community perceptions on health using methods like interviews and observation².

The second study was undertaken with the help of Leslie Butt, a PhD candidate from McGill University in Canada who was doing fieldwork in Wamena in collaboration with LIPI. Ms. Butt collaborated with the Health Coordinator and GAD Coordinator on a paper on infant and maternal health issues in the Baliem Valley³ and also held a workshop about ethnographic research methods for WATCH staff and anthropology students from UNCEN. She was of great value to the project for she was able to impart highly innovative research methods (such as body mapping⁴) to help illuminate indigenous understandings of illness and health. The useful results of these anthropological exercises led staff to collaborate with others in more research. For instance in 1997 they invited a local expert on Dani culture, Pastor Niko Asso-Lokobal, to conduct collaborative research into the incidence of and community perceptions of sexually transmitted diseases in Wamena and the Grand Valley⁵.

During the Interim Extension and WATCH III phases there was no further ethnographic health research activities. However, project staff continued to apply the methodologies, as well as some of the methods, which they had learned during the earlier phases of the project. The lesson that there is a need to understand the culture of the target communities for messages and activities to be effective was learned from. This was also apparent in the Project Directors decision to employ Ms. Barbara Grimes, an anthropologist with experience in Eastern Indonesia, to assist project staff with the design of new Health IEC materials and consult with them regarding Gender and development issues⁶.

The key lesson to be learnt from this experience is that research into local beliefs should be conducted early in the project to ensure an adequate understanding of how health messages and CD activities should be designed to resonate with these beliefs⁷. Ethnographic surveys need to be conducted as early in the project period as possible because results found later in the project can be

² The results of this study were published in (Kasniyah 1995).

³ See Butt & Srimi (1995).

⁴ For information on body mapping refer to Cornwall (1984)

⁵ The results of this study were published in Lokobal et al. (1997)

⁶ *The outcomes of this consultancy are discussed in greater detail in the following section.*

⁷ *For further discussion of issues relating to cross-cultural sensitivity and ethnographic surveys refer to Section III / 3.*

difficult to digest and incorporate into the project design. Related to the issue of insufficient baseline information was the issue of insufficient social preparation for target communities. Just as project personnel need to better understand the communities with whom they are working, so to do community members need to have a better understanding of what the project is about, especially in the remoter regions. Field research often involves a two-way flow of information and thus, earlier baseline studies could have provided an opportunity for target communities to learn about WATCH's ideals as well as to consider, in a more general sense, what development means.

The results of several ethnographic inputs to the project proved controversial amongst project staff as they challenged the assumptions upon which certain project activities were based. This was particularly problematic as these ethnographic findings were announced many years after considerable energy and resources had been used to implement the activities that were based on controversial assumptions. Considering that the project staff had considerable emotional investments in these activities, it is not surprising that they may have been less willing to question the projects' underlying assumptions as a detached observer may. Even though many staff were initially confronted by certain findings in the ethnographic surveys, they highlighted their inherent flexibility by endeavouring to learn from them. Besides providing immediate qualitative data for use in project planning and monitoring, these studies also stimulated project staff by providing them with appropriate tools to further question their assumptions and considerably alter their approaches.

It is interesting to note that World Vision designed their Alor Community Based Health Project with these lessons in mind. The design of the ACBHP incorporated a six month social preparation phase, gender survey, and health baseline surveys followed by an ethnographic survey about one year into the project. World Vision and their government counterparts in the ACBHP have found this approach to social preparation and baseline data collection very rewarding.

2.1.2 / 2.1.3 HEALTH INFORMATION EDUCATION AND COMMUNICATION (IEC) MATERIALS

- Develop appropriate Information Education and Communication (IEC) materials for use in community PHC education campaigns
- Revise and upgrade IEC materials and translate the upgraded materials into the Lani/Western Dani language

In developing Health IEC materials, the project aimed to both directly increase peoples' awareness of health issues and simple preventative and curative measures and to provide resources for use by health workers and other community leaders in community health education campaigns. Over time it became more apparent that the IEC materials would have to vary in form and content to communicate with these two different audiences: the locals and the health workers. After all, health workers had been educated in western biomedical concepts and the ways of the Indonesian bureaucracy and so IEC materials for them would have to reflect this (for further discussion about this point see Section III / 7).

In WATCH I the staff learned that IEC materials also had to reflect an understanding of local beliefs because there were problems communicating the messages in the IEC materials for local peoples. This last issue was not adequately addressed until WATCH III when extra care was taken to create IEC materials that were meaningful to local peoples

In the second phase of WATCH IEC materials were prepared that communicated simple health messages based on suggestions that had emerged from the ethnographic studies. Such materials include training booklets for cadres, a manual for TBAs, a manual for antenatal care, and posters about pneumonia and diarrhoea that came from Jakarta and another series about ARI, malaria and diarrhoea that were commissioned from the Bethesda Health Foundation. During WATCH II booklets containing flow charts for standard diagnosis and treatment for 30 diseases were also produced as an aid to aid health workers (Refer to Section II / 1.5).

In WATCH III it was proposed that materials which had been prepared by the Health Coordinator, Project Midwife and Nutritionist be reworked into the Lani language with Indonesian subtitles. This material was to be about nutrition and women and children's health and would take the form of booklets and double-sided flip charts. This activity was considered important since many local peoples, especially women, do not understand Indonesian. An anthropologist consultant, Dr. Barbara Grimes was employed to help with preparing this material. Before she arrived WATCH created a draft and field-tested (on the 9th of November 1999) this draft to receive feedback and recommendations from subdistrict level health workers. The Community Health Centre in Kurulu Subdistrict was selected as the location for this field test as it was felt that the community and the health workers at Kurulu had more in common with the target communities in Kanggime and Mamit than do those in the more urban health centres at Wamena and Hom-Hom.

The field test of this first draft was conducted with seven staff and the head of the Kurulu Health Centre, Dr. Immaculata. The method used in this trial training was for WATCH staff to present the new materials as they would for regular training activities. After the presentation, a discussion was held concerning the appropriateness and efficacy of the new materials. The purpose of this initial field trial was to determine whether or not health workers in the target communities in Kanggime and Mamit would be able to understand and relate to the materials

WATCH project staff presented the revised materials to Dr. Barbara Grimes. These materials were then discussed in detail and Dr. Grimes made numerous suggestions and corrections to improve these materials. After this meeting some changes were made to the IEC materials before a second field trial was conducted at the Hom-Hom Community Health Centre on the 11th of November. Dr. Grimes accompanied and assisted WATCH staff with this field trial in order to develop a clearer understanding of the indigenous population and their responses to the IEC media. This field trial targeted 40 indigenous (Grand Valley Dani) women who attend the Women and Children's Health (KIA) clinic as

well as several indigenous men who attending the Hom-Hom Community Health Centre for treatment. The IEC media was presented to this target group by one of the staff of the Hom-Hom Community Health Centre as it was felt that the use of an indigenous health worker would better represent training situations likely to occur in remote communities. A number of very interesting points were raised in this field trial and the IEC materials were subsequently modified to be able to be more understood by local peoples.

2.1.4 / 2.1.5 Preventative Health Education Campaigns

- Train government and community health workers and other community leaders in appropriate preventative health measures
- Disseminate IEC materials to government and community health workers and other community leaders and encourage and supervise them in conducting PHC education campaigns amongst their communities

WATCH ensured that many key people in the community such as midwives, cadres, doctors, mantris, teachers and church leaders were taught simple health messages. These were people who many were likely to turn to for health counselling but as health workers had more direct and regular contact with people needing health information, they were selected as the primary target group for the new IEC media. Due to their former training and experience, out of the whole community health workers were most likely to grasp the importance of WATCH's health messages. It was intended that many health workers would apply this new knowledge in their daily lives and would foster interest, understanding and more widespread application of these ideas throughout the communities of which they are a part.

2.1.5 PROMOTING SWEET POTATO FLOUR AS SUPERORALITE

An iconic feature of the WATCH project was its emphasis on promoting sweet potato flour (*tepung ubi*) as super-oralite. Drinking a solution made from sweet potato (sliced, sun-dried and pounded), water, sugars and salts, substances that have been lost during an episode of diarrhoea can be replaced and treating the symptoms of diarrhoea can save lives. This product is an ideal PHC solution because people can prevent dehydration from diarrhoea by making the 'medicine' themselves from a local resource. The technique to make *tepung obi* was taught to mantris and cadres and to communities through various group-training activities. The PKK too took an interest in this initiative and made and packaged *tepung obi* in plastic containers and then distributed them to groups of people. It was hoped that *tepung obi* would be made available through the cooperatives and also that people would make it themselves when their children had diarrhoea.

The use of *tepung ubi* for treating symptoms of diarrhoea was inconsistent and never really took off. It seemed that it was too labour intensive to cut, dry and then pound sweet potato. In

WATCH III groups in Kanggime protested that until they had better technology to make *tepung ubi*, it was too labour intensive. It is also likely that many doubted the efficacy of super-oralite, preferring pills or injections or even the commercially available oralite. In a visit to Koropun in 1997, it was found that the community preferred oralite to super-oralite because as a pure salt/sugar substance it tasted better. It can also be speculated that *tepung ubi* was not supported by mantris and cadres as it is not in their interest to support self serving health initiatives. After all their livelihood depends on people using their services. As with the problems experienced in gaining acceptance with their idea of

The project adviser, Dr. Budi Subianto from the PHO identified poor attention to social marketing as one of the main reasons why social resistance to the production and use of super-oralite was not overcome. For more on social marketing refer to section II / 3.3.6

2.2 MALARIA PROGRAM

- To decrease the incidence of malaria amongst target villages

Combating malaria was of importance to the project because malaria is reported to be increasing in Jayawijaya and is currently considered to be the third biggest killer in Jayawijaya (after acute respiratory infection and diarrhoea). In the past the transmission of malaria was generally considered to have an upper limit of around 1,200 metres ASL. Thus the disease was generally considered to be absent or at least non-communicable in most montane valleys in Jayawijaya. However, there is evidence to suggest these conditions are changing. The increasing incidence of malaria and its spread to higher altitudes is linked to a number of possible factors. Perhaps the most significant of these factors are the global climatic changes which many scientists believe are currently occurring and other climatic fluctuations like the 1997 ENSO related drought, during which malaria transmission is believed to have spread to areas over 1,600 metres above sea level. Other factors which have been linked to the increasing incidence of malaria in Jayawijaya is the increased incidence of travel between the highlands and the lowlands, more nucleated and sedentary settlement patterns (which allows for the localised build up of populations of both vectors and the malarial pathogens alongside the human population), changes in agriculture (rice paddies and cattle footprints may be providing new niches for anopheles mosquitoes to breed in), and changes in lifestyle such as staying up later due to the increase in kerosene and electric lights.

Traditional malaria control

Traditionally, highland communities in Jayawijaya have relied largely on smoke and pig grease to repel mosquitoes. Whilst there is no evidence of the efficacy or otherwise of pig grease smeared over the body as a barrier against mosquito or other insect bites, the smokiness of *honais* (traditional houses) has been clearly shown to repel mosquitoes and keep malarial infection rates down. It is interesting to note that *honais* are usually at their smokiest around dawn and dusk, when mosquitoes are usually most active. During the night, fires are usually extinguished so that people sleeping in the sleeping lofts will

not be asphyxiated. Whilst this method of malaria control has much to recommend, the down side is that the smokiness of huts has also been linked to the high incidence of acute respiratory infections (see section 2.3 for more on indoor air pollution). In order to bring about the desired decrease in the incidence of malaria, up until early WATCH II, a wide variety of interventions were considered possible. These interventions can be broadly grouped into those that were chemical, biological, mechanical and behavioural.

Chemical

The use of chemicals including insecticidal control of the anopheles mosquito, insect repellents, and other pharmaceuticals for prophylaxis and treatment are all problematic in Jayawijaya. Insecticidal control of vectors through large scale public spraying programs not only poses considerable risks to humans and the environment but they are also extremely expensive, particularly in areas like Irian Jaya. The use of chemical repellents and pharmaceuticals are limited due to their lack of availability. Occasionally where they are available at local drugstores, they are expensive and even if they were made available at a low cost prolonged use of the drugs can be a health risk. Chloroquine, the drug most frequently available in the province, is of little value as a study in 1995 by the DHO and NAMRU found that there is a 90% resistance rate to chloroquine for plasmodium falciparum and a 95% for plasmodium vivax in Jayawijaya. Even so, during WATCH III chloroquine tablets were provided to pregnant women on a weekly basis in an attempt to see if maternal and infant mortality might be reduced.

WATCH investigated several alternatives to high cost chemical interventions by exploring the potential's of locally manufacturable chemical controls to combat malaria. For instance, in 1995 they invited a German soap maker volunteer from the SES (senior expert services) to try and make pyrethrum soap. This expert did teach people in Jayawijaya how to make soap however these lessons were of limited use as materials for soap making or pyrethrum were readily available. Dr Fred Rumawas kindly donated pyrethrum plants but unfortunately they died. WATCH staff promoted other alternatives like papaya leaf tea for its prophylactic qualities but its bitter taste ensured that it was not a popular option. Perhaps the most promising of low input chemical interventions was the use of the plant *Artemisia annua*, an antimalarial that has been used in China for centuries. Artemisia, which was the focus of a substantive AusAID Project in Vietnam around this time, was planted in different gardens and its seeds were sent to the DOH in Jakarta to develop medicine. In addition to this, WATCH contacted many agencies for advice on how to extract the pharmaceutical properties from the Artemisia plant at a home industry level. Ultimately they felt that at the village level the best way to use it was as a decoction as the manufacture of a chemical extraction would be at present, beyond the capabilities of locals. The Artemisia exercises relied on the Project Managers commitment and vision. When he left interest in Artemisia waned.

Biological

In WATCH I staff planned to carry out biological intervention in the form of using Tilapia fish in large pools of water to keep larvae populations low in the project pilot area of Kobakma. Before this was undertaken WATCH employed a team of consultants to do an entomological survey of the region. It was discovered that the *Anopheles musculata* did not live in the large ponds that it was assumed to live in. This revelation saved the project staff from following through with the proposed biological intervention. As mosquitoes were discovered to habitate mostly in the footprints of pigs no intervention seemed possible. *This experience is a stark reminder that before changes are implemented it is essential to research whether or not these changes are necessary. That is, it is worthwhile to channel funding from intervention to research as more accurate interventions will be possible.*

Mechanical / Physical

Mechanical/physical interventions are those which attempt to stop the transmission of malaria by placing physical barriers in the path of vectors. In the case of malaria, this can include the installation of insect screens on houses, the use of bed nets and the use of blankets or clothes as barriers against mosquito bites. In the context of Jayawijaya the high cost and high degree of difficulty involved in fully screening houses against insects makes this option impractical for an overwhelming majority of the population.

During WATCH I and II the efficacy of pyrethrum impregnated bed nets was trialed around Kobakma and Elelim. These areas were both selected for participation in the trial due to the fact that both are located at relatively low altitudes in areas where malaria is considered hyper-endemic. The community at Elelim suffered particularly badly from malaria as most of the community had been recently relocated there from a higher altitude in the aftermath of a major earthquake. Unfortunately, due to unreliable flights into Elelim, the trials were abandoned. In the first trial 120 pyrethrum impregnated bed nets were distributed in Kobakma and Elelim. Rather than hanging them over each individual, bed nets were used as curtains inside people's homes. A section of the community did not sleep inside the nets to meet the need for a control sample. Of the 169 people who were covered by the bed nets, the prevalence rate of *P. falciparum* decreased from 21% to 11% over three months. The rates of *P. vivax* did not change which is not surprising considering that this is a recurring form of malaria. During these three months anaemia amongst women decreased also. After the third survey in Kobakma and the second in Elelim, it appeared that *P. falciparum* had decreased in Elelim and not in Kobakma.

Due to the myriad of uncontrollable variables we cannot draw substantial information from this data. For instance, many bed nets tore because they were of poor quality and mosquitoes can bite people when they are not inside their homes. A positive feature of this activity was that the community members paid for the bed nets and so people came to like and care for the nets especially when they realised that the nets kill not only mosquitoes, but other insects too. Indeed, an indirect benefit of the

nets is that they can help reduce skin infections that often result from the bites of other insects. As the DHO provided the nets for free, payment for the nets was put away by project staff, in a fund for further health promotion activities, such as how to make your own bed nets. Paying for the bed nets was a strategy designed by project staff to ensure that target communities would be committed to the activity. It seemed that bed nets were a popular idea yet they were of poor quality. Rather than rely on the DHOs' supply of bed nets, it was decided that making bed nets could become a cottage industry and sold through the Wamena based cooperative. A short while later a doctor in Bandung supplied the material and instructions for making bed nets. By the end of WATCH II the project decided to import the materials into bed nets and the Kedai was to make the material into impregnated bed nets. Although the local missionary Paul Etherington was extremely helpful in supervising this activity, supervision was really the responsibility of the DHO/DHS and to a lesser extent WATCH. The results from this activity would have been more positive if there was more support and follow up (see also section II / 3 for information on problems with supervision).

During the interim extension phase WATCH, in collaboration with the DHO, continued to trial the effects of using pyrethrum-soaked bed-nets and blankets on five communities around Kobakma. In response poor results from the earlier bed net trials WATCH trialed a new approach using the bednets as curtains around the walls of the native round houses or honai. Unfortunately this approach also produced poor results as the nets quickly became torn or melted by sparks from cooking and heating fires. Furthermore, the effect of the permethrin was observed to decrease rapidly after installation in the honais due to the effects of smoke and wood ash and the presence of the nets lining honai walls was also felt to increase the risk of fires.

There were a number of reasons why the results of this trial were also rather inconclusive. Primarily the quality of blankets and bednets provided by the DHO were so poor that many ripped before the trial had even been completed. The low level of motivation amongst the community health cadres prevented other community members from correctly using the bed-nets as the cadres were supposed to encourage and provide information to the community. This in turn can be related to the poor supervision of the trial on the part of both WATCH personnel and staff of the Kobakma Community Health Centre. It was not easy for WATCH staff to supervise this activity because of transportation problems experienced during the interim phase. While the poor supervision by staff at the Kobakma Community Health Centre can be explained by the lack of contact with WATCH and even possible because of a degree of resentment towards the DHO for giving them additional responsibilities and increasing their workload. While many felt that this exercise was a waste of time, many in the community also felt that it was a good way to get a free, even if not a very good bed-nets. *A lesson learned from the Kobakma bednet trials is perhaps that caution should be taken when expecting local health workers or community members to take on additional workload as part of project activities.*

A more positive outcome of these trials was that they helped to considerably change community beliefs regarding the cause of malaria. Prior to the bednet trials local beliefs held that malaria was transmitted either through dirty water or through super natural causes. After the trials most community members were aware of the relationship between malaria and the Anopheles mosquito.

Behavioural

Education was the preferred behavioural method for WATCH. The project focused on training health service personnel to better detect and treat malaria and in 1992 staff provided microscopes to four major community health centres along with training in the use of these microscopes to detect malaria parasites. They also educated the broader community regarding the causes, health risks and preventative measures for malaria. *Because so many factors conspire against anti-malarial interventions we need to have less faith in the effectiveness of clinical activities and more faith in the ability to increase awareness about the causes of malaria and how to avoid it.*

During the interim extension phase research became an important component in WATCH's anti-malarial program. WATCH became involved in a special working group established by the PHO in response to reports of an increasing incidence of malaria morbidity and mortality in the Jayawijaya Highlands. As well as the Provincial and District Health Offices (in particular members of their communicable diseases eradication sections) other members of this group included three international health organisations (Medicins Sans Frontiers, Merlin and ICRC), several local missions (APCM, RBMU, NRC and CAMA), the community health section of Freeport Mining, and a team from the National Ministry of Health. The main aim of this working group was to gather further data regarding the nature of the disease, their vectors and transmission and its impact on community health. Furthermore, they explored strategies to combat the further increase of malaria in Jayawijaya. To this end WATCH cooperated in conducting blood slide examinations, entomological and epidemiological studies, particularly around Kanggime and Kembu-Mamit subdistricts. Another important aim of these surveys was to refine the Case Management Protocols and treatment dosage guidelines.

2.3 INDOOR AIR POLLUTION REDUCTION CAMPAIGN

- To reduce the incidence of acute respiratory infection in children under the age of five through building demonstration mud brick houses and smokeless stoves in target areas

Early on in the project WATCH decided to not develop a final model of a healthy house and paralleling the decision by the Ministry of Public Works, WATCH staff abandoned this endeavour entirely. Before this decision was reached WATCH developed several demonstration healthy houses in the areas of Pitt River, Kelila, Makki, Tiom and Wamena. It was a good idea to abandon this activity as it is too great a task to convince people to alter their traditional architecture. Most importantly, healthy houses were seen to lack necessary light and heat. After all *honais* (traditional huts) allow people to keep warm because they have an indoor fire and if someone wants to see inside a pot or light

a cigarette, a flaming twig can be used. In contrast, healthy houses are considered dark and cold and people, not surprisingly, do not wish to spend their meagre incomes on lamps and blankets. As a result most model houses have ended up as storage spaces or places where outsiders like tourists sleep. Anthropologists like Karl Heider have commented that *honais* 'fit' with the practical and cosmological needs of local peoples. This idea is supported by the results from a study conducted in Ok Sibil by a team from the MOH and NAMRU in 1995. This study demonstrated a higher mosquito biting rate and incidence of malaria in people that lived in smokeless houses than those who lived in traditional huts. It appears that smoke deters mosquitos.

Aside from the healthy house project, WATCH staff promoted the use of smokeless stoves as a means to decrease indoor air pollution. Alongside YPMD, WATCH developed a low technology smokeless cooking stove which would not only decrease domestic pollution, but it would also save firewood. Importantly, as it can be made it doesn't need to be purchased which means having the stove would not compromise self-reliance. Like the healthy houses, the stove was poorly accepted into the community. *People have no incentive to abandon their honias and live in 'healthy houses' and/or use smokeless stoves because the fireplace inside the honai allows the community to cook, light cigarettes and keep warm. There are less obvious reasons too for why healthy houses are promoted and rejected. Many healthy housing programs are quite open in expressing the fact that their program has much to do with promoting "better" nuclear family values. Yet the living arrangements of local people in Jayawijaya are compatible with important social structures and behaviours such as polygamy and long term breastfeeding. These structures and behaviours are firmly entrenched in Jayawijayan culture.*

2.4 Clean water and sanitation programs

Clean Water and Sanitation programs are capable of preventing diseases caused by poor hygiene such as diarrhoea, scabies and dysentery. One means to this goal was to train mantris and cadres to educate local people about behaviours that will promote basic hygiene and sanitation. Another was to utilise the knowledge and skills of a German volunteer soap maker. The main activity in this program was by supplying materials and promoting use of fresh water and latrines.

Latrines

Traditionally Jayawijayan communities have had no form of latrines. Defecation around human settlements seems to have been restricted to certain areas and most groups seem to maintain strict taboos against defecation close to waterways. In the past when human settlement patterns were more dispersed and shifting, these arrangements for human waste disposal seem adequate. Yet as populations have settled around stations this approach may lead to a range of health problems including gastro-intestinal infections like diarrhoea, dysentery and cholera, and parasites such as scabies and worms. Given that local pigs also like to feed on human excrement there is considerable risk that parasites may be passed between the two species. Although local people have been aware of latrines

for some time they have generally not been popular. The government constructed latrines and wells at the Wosilimo Market but they were destroyed because, it is said, as they were built on land occupied by the government the community did not feel any sense of respect for them. Another example comes from Manda where latrines and wells were built and maintained by a WATCH cadre but rather than being used by the community the latrines were largely reserved for special guests.

Standard models of *latrines* were not acceptable because they would attract flies and so WATCH sourced two other kinds of latrines; one that needs little water for areas with a limited water supply and one that uses more water for areas with greater water supplies. By 1993 10 pit latrines were built and a ‘demonstration’ Blair VIP latrine was built in several centres. In addition to this, some groups learnt to make their own latrines and an entrepreneurial cadre made latrine bowls to sell. In 1996 the doctor in Tiom, along with BPPT, planned to make 13 latrines in Tiom. While BPPT designed and constructed the latrines and people from Tiom provided the labour, WATCH provided the bowls and materials. During WATCH III the project aimed to help 13 groups in Kanggime and 8 groups in Kembu/Mamit to construct and learn how to use and maintain latrines. They also continued to promote sanitation.

WATCH experienced a major breakthrough in the implementation of this program when the Catholic schools built latrines in their twenty-five schools around Wamena. Moreover, children were taught and encouraged to use the latrines built in these schools. This was a significant development because it teaches a large section of the younger generation the need to use latrines. It was hoped that this development would be a model for other schools and public buildings to emulate. There was also a plan to teach the community how to use latrines via schools and via a travelling video show in the PKK car but this didn’t eventuate. *Aiming interventions at children can improve chances of the project’s sustainability. Teaching children how to use latrines can do more than benefit their health in the short term. By establishing positive behaviours early in life, children can carry these behaviours with them throughout their life and eventually teach them to their children.*

Water Supply

In the original baseline study it was found that at least 20-30 villages in the project area for WATCH I had problems with accessing clean water. Whilst this may seem incredulous in an area with extremely high rainfall, it is the case because extremely steep terrain in some areas leads to very rapid run off. Also many areas in Jayawijaya are built on karst and at times sub-surface drainage can make water inaccessible.

Ecological particularities determined the possibility of and methods for supplying fresh water. For instance, in Kobakma there was no suitable spring to pipe water from so instead WATCH organised a ferro-cement rain water tank to be built. In some places supplying water was too funding-intensive (ie. Kelila and Kiwirok) and so they were not helped in this respect. In villages that were to

have a piped water supply, a decision had to be made about where the pipe should end. Problems can arise when water supplies bypass some villages. For instance in Ok Sibil the water system ended up serving the Hospital, Police, Army and government with only one water point supplied for the locals. This led to considerable disgruntlement by some community members and even the slashing of pipes.

As the budget for this goal was comparatively small it is hard to be too critical here however the authors feel that a PHC project should have committed more resources to ensuring villages had a clean water supply.

Improvements in hygiene and sanitation in Euro-American countries was largely a result of 'germ theory' or the notion that micro-organisms cause disease becoming widely accepted. It is unlikely that this belief would become internalised by locals in Jayawijaya as they have different understandings of the body and health. Therefore the principles of germ theory need to be rephrased according to locally relevant and not biomedical paradigms.

2.5 Nutrition Program - To improve the nutritional status of women and children

The nutritional interventions that were implemented by project staff were primarily aimed at reaching pregnant and lactating women as well as children under the age of five. This was because a nutritional survey conducted by the DHO in 1991 pointed to a high incidence of nutritional deficiencies amongst pregnant and lactating women and amongst children between the ages of 3-6 and 18-24 months. These findings were also supported by the results of a survey conducted by doctors based in Tiom subdistrict in 1992. Based on this research, WATCH developed its pro-nutrition approach: to develop a nutritious weaning food and to promote better nutrition for pregnant women.

To succeed in this dual-pronged approach many people worked together. In July 1993 the Health Coordinator and the WID coordinator decided to work together on nutrition enhancing programs since nutrition-related activities complemented the objective of improving the health of women and children. The PKK came to be involved with implementing pro-nutrition activities and the district PKK, with project staff, trained the subdistrict PKK members on nutrition promotion skills.

Flours and weaning food

In order to overcome the endemic energy malnutrition which has been observed amongst Highland Papuan children aged between six and thirty-six months, WATCH collaborated with the PKK and BPPT to develop a suitable food supplement for weaning babies through investigating the potential of mixed flours as a high energy food. These products came to be seen not only as an important weaning food but also as a valuable source of energy for local people generally. Foods such as sweet potato, peanut, maize, soyabeans, mungbeans, yams and bananas were sliced, dried and then pounded into flours. It was found that the energy in flours was higher than in bulk (2 or 3 times higher per gram) but

when they were watered down to make weaning food, the energy content decreased. Malting beans and maize to make amylase powder was seen as a solution because when amylase powder is added to flour, not only is its energy content increased, its viscosity is lessened. Therefore less water is needed to thin down the flour. However, the use of analyse powders added considerably to the complexity of the process of making the powders so it was not widely promoted. As sweet potato was already well established in the region, sweet potato flour was deemed to have the most potential as a popular foodstuff.

By the end of WATCH II the development of ‘power powder’ was complete and its implementation was taken over by the Nutrition Section of the DHO. After a good weaning food was developed, its importance and the method to make it was taught to local women through the PKK group, newly trained midwives and CD Cadres / FOs. Furthermore, the method to make ‘power powder’ was taught to health centre doctors, NGO health workers and mantris. Although a trial in Tiom indicated that babies seemed to like this food, and although it required local resources and simple technologies, making mixed baby foods was not popular amongst the target communities.

A range of constraints limited the cultural absorption of power powder. The primary reason given for rejecting power powder was that it was taboo to cut sweet potatoes as it might mean that the sweet potatoes in one’s garden would similarly be small and not grow. However as the consultant Dr Grimes pointed out “if they see it as desirable. they will find some way around the taboo.. (and)..if the flour is not desired for other reasons.. the cultural taboo against cutting sweet potato will remain a good excuse to avoid making the flour”. There were other reasons for the lack of community enthusiasm about the power powder such as that since there was a lack of equipment for making the powder its production was too labour intensive, that there was a lack of spoons in the villages which made it hard to feed the porridge to babies and also because most people had problems finding airtight containers for storing powders. To address these problems equipment, spoons and storage containers were distributed to some target communities and the making of power powder was centralised in the Cooperative / Kedai with mostly men encouraged to participate.

Despite these attempts to facilitate the production, storage and consumption of “power powder”, its popularity remained low. During WATCH II & III those who had been trained in the production of the power powder were retested and the results highlighted a poor knowledge retention rate. Over time supervisors became aware that even those people who still remembered how to make it, actual application of the knowledge remained rare.

It seems most likely that the main factor undermining the uptake of power powder was that the powder was not considered prestigious. In most highland communities whole and large sweet potatoes

are symbols of power⁸. They are important symbols in ceremonial activities and the size, quality and quantity of harvests can provide kudos for the women who grow them and prestige for the men who are considered adept at controlling and utilising environmental resources. Although rice and a number of other recently introduced foods are not considered 'powerful foodstuffs' in the same way that sweet potatoes are, they are still considered to be prestigious foods as they are associated with modernity. By grinding sweet potato into a powder, the tuber is robbed of its value as a prestigious foodstuff and because it can be done by anyone it says nothing of the providers ability to manipulate the cash economy or influence government officials as new foods like rice can. Local peoples appeal to taboo as a reason to not use the powder is most likely an explanation hiding these deeper social concerns. This is not to say that sweet potato or other flours could not be promoted and developed as a prestige food but that this would require a novel approach to the social marketing of the new products⁹.

Dietary Diversification

As well as educating women about the importance of weaning foods, mantri's and cadres collaborated with WID and CD facilitators in educating locals about many other nutritional issues. General information about the importance of good nutrition was combined with special cooking sessions. These entertaining cooking sessions taught local women how to make things like cakes from sweet potato, corn, soyabean and peanuts as well as vegetable soup. In other lessons milk, tempe and tofu from soyabeans and peanut oil was made. It was hoped that new plants, animals and processed items would improve the nutrition of women and children as well as provide women with extra income (see section II/ 3) for more information about these activities). Surveys in mid 1998 showed that training in new food preparations had been relatively successful. Not all methods and foods had been adopted but many different foods in different regions have been incorporated into village life.

During WATCH III community development groups in Kanggime and Kembu-Mamit subdistricts were provided with vegetable and legume seeds and encouraged use them to develop group nutrition gardens as demonstration plots to the broader community. These nutrition gardens were to be situated close to or within housing complexes and were to be planted with a variety of foods. The thinking behind these gardens was that by having a range of nutritious food plants within the immediate vicinity of the cooking pot people would begin to introduce more diversity into their regular diet. It also sought to build upon the fact that many people already used gardens planted around the house as a source of food when they were to busy or ill to travel to the main gardens. It was therefore felt that by diversifying the range of crops grown in these home gardens it would also encourage the local consumption of these new crops.

⁸ As has been pointed out in section I / 1.3 a number of groups in Jayawijaya consider either taro or sago to be the staple and power food.

⁹ For more on social marketing refer to section III / 7

Nutritional Supplements

The project supported the national policy of supplying vitamin A 200.000 IU twice a year for children aged 1-4 and 100.00 IU for children aged 6-11 months. It is interesting to note that the Project Manager believed that local peoples are not vitamin A deficient but that vitamin A must be used as a supplement to prevent the severity of diarrhoea and acute respiratory infection. As well as administering vitamin A routinely, health workers were trained in the importance of giving vitamin A 200.000 IU twice if the children contract severe pneumonia, measles, diarrhoea and/or malaria and the need to give mothers with infants under 6 months old only one dose of vitamin A 2000.000 IU. The project also supported giving pregnant women a low dose of vitamin A for a period of time but has found low dose vitamin A difficult to obtain. During WATCH III a minimum of 90 Iron tablets were to be given to 413 pregnant women in Kanggime and 298 in Kembu-Mamit.

Arguably the greatest impact that WATCH has had on attitudes towards nutrition in Jayawijaya was their important role in debunking the view held by many non-Irianese that Jayawijaya's main staples, sweet potatoes and taro were nutritionally inferior to their own staple, white rice. The Bupati felt that introducing rice fields would be a solution to the nutritional problems in Jayawijaya, especially as there is lots of water and unused land in the district. An anthropologist, Leslie Butt, also recounts causing shock amongst the leadership of the Jayawijaya PKK when she stated in a WATCH seminar that sweet potato and taro were nutritionally superior to instant noodles. While local people enjoy eating rice insofar as it offers variation in their diet, in many ways the sweet potato is more suited to the environment. The PM Dr. Sukwan pointed out that rice fields would provide an ideal breeding ground for the anopheles mosquito, which was on the increase in Jayawijaya. Moreover, he referred to studies that show how certain stomach acids catalyse more protein from the sweet potato that can be measured in its predigested form and therefore it is richer in protein than is often claimed. In contrast with other official views Dr Sukwan said that the problem is not that the sweet potato doesn't have enough nutrition, but that people don't eat enough of it because they only eat twice a day.

3. COMMUNITY DEVELOPMENT PROGRAM

- To facilitate village based initiatives (community development) that will indirectly improve the health status of women and children.

3.1 GROUP ESTABLISHMENT, CAPACITY BUILDING & PARTICIPATORY PLANNING

- To establish and organise effective community development groups and prioritise their development needs and limitations.

3.1.1 / 3.1.2 ESTABLISHMENT OF CD GROUPS

WATCH I aimed to establish a total of 100 Women's or WID groups and 100 men's agricultural or community development groups across Jayawijaya. More specifically the aim was to establish 20 WID and CD groups in 1991-1992 and 40 of each in 1992-1993 and 1993 –1994. Field staff, most notably the WID Coordinator, were from the outset very active in establishing groups. Their field excursions began around Wamena and then spread to the near eastern and western subdistricts. About a year into the project, CD staff also began travelling into the three Star Mountains Sub-districts (Ok Sibil, Ok Bibab and Kiwirok) in order to establish CD groups and activities. However, due to remoteness of these areas from Wamena, WATCH personnel soon decided not to pursue the formation of CD groups in these sub-districts as it was apparent that they did not have adequate resources to support the adequate supervision of groups in such a remote location. Instead WATCH chose to carry out a more limited CD program in these areas working through existing bodies, including the sub-district level administrations, local church and self help groups and also through the auspices of the Bangdes IDT preparation activities and PKK programs, to deliver training and other assistance for CD activities.

By mid 1993 there were 130 groups established in 112 villages and various types of CD activities were under way. By the end of WATCH I in 1994 the total number of groups reached a total of 140. Whilst the number of groups established in WATCH I exceeded the original target, serious difficulties were encountered with many groups performing very poorly. This forced WATCH personnel to carefully reconsider their strategy for establishing groups.

The original strategy to establish groups along the lines of the village level government / administrative unit or *Desa* seemed fitting considering that this structure was applied by WATCH's partner agency, the DHS. As such it was felt that the formation of groups along *desa* lines would facilitate communication and coordination with existing village level government groups such as the LMD, LKMD and PKK and that these village institutions would be capable of helping with the monitoring and coordinating of groups. And the groups were gendered as WATCH decided that groups would perform better in they mirrored the 'social reality' that the lives of men and women in Jayawijaya were extremely segregated. Agricultural groups consisting of only males were to be organised first while WID groups and activities would be initiated slightly later than, and as an extension of, the agricultural groups. In line with this gendered approach to group formation, it was also planned that training sessions for members of the agricultural and WID groups would target males and females separately.

Only months into the project it became apparent that many groups experienced poor motivation, poor delegation, lapsed responsibility, and suspicion. This was not surprising considering that government administrative structures are not very meaningful to Jayawijayan communities and

they commonly cut across kinship lines. And WATCH couldn't rely on the support of the LMD, LKMD and PKK because, as has been discussed elsewhere (cf. Section I / 1.4.1), these village level institutions are generally non-functional in remote areas across Jayawijaya. The idea that agricultural groups could be an appropriate sectoral basis for men's groups with women joining in as an extension was also proving to be misguided in light of the strong cultural demarcation of horticulture and animal husbandry as predominantly women's work. Indeed the exclusion of women from the men's groups actually risked further disadvantaging women as it could preclude women from influencing the decisions made in the men's groups which would subsequently impact upon them.

The second group strategy emerged around June 1992, approximately nine months after establishing the initial groups. In response to the aforementioned problems WATCH began to form groups along the lines of church congregations or parishes. Whilst such organisational structures are still externally imposed, the missions have generally had much longer and more sustained contact with most communities than the government had. As such they had been able to develop organisational structures that were more meaningful to local communities and have more credibility amongst Jayawijayan communities as they are seen to more concerned about serving the community than the government is.

The third group strategy was instituted towards the end of WATCH I as a result of observations that forming groups along church lines was, in many areas, not proving to be as successful as had been hoped. Whilst church based groups were generally drawn along meaningful social lines these structures occasionally cut across clan lines and often were too large, encompassing multiple local clan groups. Towards the end of WATCH I field staff had come to better comprehend Jayawijayan systems of social organisation and realised that a uniform approach to group structure was not appropriate. Rather, it was felt that local communities had to be given greater control over the form that their groups took. For example, it was observed that fairly large group structures could work amongst many Dani and Lani communities whereas amongst Yali and Mek communities groups had to be much smaller and based along the lines of the immediate family or the cohabitants of a single hamlet. This reflects the nature of the social organisation of these groups (as described in Section I / 1.2).

As the division of groups and training activities along the lines of sex proved to be inappropriate, this approach was also changed. Around 18 – 24 months into the project the gendered approach to group formation began to be gradually abandoned in favour of an integrated approach. At first the formal distinction between WID and Agricultural Groups was maintained but the groups began to be trained together more often. In WATCH II this arrangement was formalised with integrated CD groups replacing the WID and Agricultural Groups of WATCH I. Whilst the timing of this change roughly corresponded to the industry wide transition from "Women in Development" (WID) theory to

“Gender and Development” (GAD) theory, the decision to have mixed sex groups was driven by the need to overcome the shortcomings of the former, segregated approach.

Whilst WATCH II aimed to achieve greater focus, the number of groups registered with the project actually increased (up to 180 groups). However, it should be noted that much of WATCH’s attention was focused on around 100 groups located in the thirteen centres / focus areas covered by WATCH II. During the Kanggime extension, WATCH, worked with 96 community formed groups in Kanggime and Kembu/Mamit subdistricts. In this phase of the project groups were also far more concentrated and for the first time the project could allocate adequate resources to the training and supervision of groups.

Despite having developed a much better understanding of social dynamics within Jayawijayan communities and a more flexible approach to the establishment of CD groups, problems with the formation of groups continued in WATCH III. In particular WATCH field staff found that many groups that had previously been formed in the area were no longer functional or active. This meant that WATCH staff had to effectually start from scratch, establishing new groups and reviving a few older ones. Secondly, there were considerable problems with groups attempting to register with both the WATCH project and the WVII ADP as well as with members of the same family or domiciliary group attempting to register as being members of separate groups. This latter problem was further confused by difficulties deciphering Jayawijayan kin affinities and the high degree of residential mobility amongst Jayawijayan communities. Despite it being considered that establishing groups in WATCH III would be a comparatively straightforward activity, it ultimately took staff the better part of the first project year to adequately sort out the groups and their membership. This in turn impacted upon other project streams that were dependent upon the establishment of CD groups.

See section III/ 8 for an analysis of the strategies for forming groups and working with groups.

3.1.3 / 3.1.4 SELECTION AND TRAINING OF CD CADRES & FIELD OFFICERS (FOS)

Selection of CD Cadres

In order to facilitate group planning and implementation of group activities during WATCH I, two people were selected as CD cadres from each of the agricultural groups whilst WID facilitators were also selected from each of the WID Groups¹⁰. It was hoped that staff would collaborate with or draw advice from the local LMD, LKMD and PKK when selecting CD Cadres and WID facilitators. Unfortunately the weakness or non-existence of these institutions in most *desa* meant that WATCH had to take a greater role than had been expected in facilitating the communities’ selection of cadres and WID Facilitators. This proved quite difficult for WATCH staff not only because at this time they had

¹⁰ For a more detailed description of the approach applied to the formation of WID groups and the selection and training of WID Coordinators and Facilitators refer to Section II / 4.3 - 4.4

fairly limited experience in group facilitation, but even more importantly because most staff had not long been living in Jayawijaya and therefore they had an extremely limited understanding local social dynamics and group decision making processes¹¹. These issues were further compounded by the prescriptions for forming groups laid out in the project design, which seemed to emphasise the development of many groups in a short period of time, regardless of the quality of the groups.

In many areas WATCH was able to draw on the connections and standing of local church leaders in communicating their requirements in regards to cadres and facilitating the selection process. In those areas where there were still missionaries in residence, such as Soba and Koropun, WATCH personnel could also discuss the selection process with them and thus gain some insights into the nature of local social dynamics and / or the character and aptitude of specific candidates. There were also instances, most notably in Star Mountains Sub-districts, where the staff worked with advice received from the local *Camat* or could use the *Camat* and his staff as an intermediary in the selection process. However, in many locations they had to facilitate the selection process based largely upon their perceptions after only a few days with the community. Obviously this inadequate approach to the selection of cadres often resulted in cadres of dubious aptitude being selected, which further undermined the already limited effectiveness of group structures.

This situation improved considerably during the course of the project as field staff came to better understand local social structures and the people they were working with. Furthermore, as group structures became more socially relevant and project staff became more proficient in participatory processes it became feasible to select cadres in collaboration with community organisations such as churches or community foundations or directly with members of the groups themselves. Yet because it was not culturally sensitive to revoke previous cadres appointments, throughout WATCH I and into WATCH II field staff were compelled to continue working with some ill-suited cadres.

¹¹ Group decision making processes amongst most Melanesian societies are markedly different from those found in most of the Malayan / Austronesian cultures of Central and Western Indonesia from whence most of the project staff originated. Many Malayan / Austronesian cultures have fairly hierarchal social structures and decision making on behalf of a larger group can often be undertaken by a small core of respected individuals (cf. Geertz 1959). In the Melanesian context there is very limited social hierarchy and individuals are usually quite fiercely assertive of their own independence. Consequently decisions must be made through the consensus of the entire group with important individuals, or “big men”, only able to influence the process through rhetoric and personal influence. This process is generally very time consuming, can often result in the failure to reach any decision at all and is difficult for outsiders to follow, let alone facilitate. Furthermore, it often occurs that even once a decision has seemingly been finalised within a formal meeting, the decision will still need to be cleared with other effected parties, including women, who rarely participate directly in the formal decision making process, before the decision is fully ratified. For further reading on group politics and decision making in Melanesia see Godelier & Strathern (1991).

Selection of Field Officers (FOs)

A further difficulty experienced during WATCH I was related to supervision. It proved extremely difficult for project staff, and in particular the CD and WID Coordinators, to adequately supervise over 140 groups and almost 300 cadres. Consequently, WATCH II was designed so that more CD and GAD staff would be employed, group supervision would be more evenly distributed between the staff, and that one Field Officer (FOs) would be selected from the most diligent and effective cadres in each of the 13 WATCH II focus areas. The role of these FOs was to assist WATCH personnel with the supervision and training of other CD cadres. Although staff took into account the opinions and requests of local leaders and the broader community, the selection of FOs at the beginning of WATCH II was primarily based on their capability as cadres in the WATCH I phase. During WATCH III, FOs were considered unnecessary because the target areas were much smaller and because several extra formal project staff had been employed to work as field based Cadre Supervisors.

Training of CD Cadres and Field Officers

After cadres were selected they received initial training in basic theory about PHC, group management and community development. They were given basic training for trainers and were introduced to participatory planning methodologies for group self-analysis and planning. They were also informed that their expected role was to motivate and sometimes train other group members, facilitate and supervise the implementation of group activities and liaise with and coordinate for visits by project staff and CD trainers. Whilst many initial cadre training activities were conducted as workshops in the YKB training centre in Wamena some training, particularly for those cadres living in more remote areas, was conducted in situ at centralised locations across the district. Those cadres, who could not attend workshops in Wamena due to their remote locations, also received extra photocopied notes as it was anticipated that there would be a longer lapse before a follow up visit.

It was proposed that each CD worker would receive two weeks training every six months however it proved impossible to conduct these sessions as frequent as had been planned. Given the extreme logistical difficulties involved in servicing the more remote areas of Jayawijaya, particularly during WATCH I when there was limited staff and a large area to be covered, the failure of WATCH field staff to maintain the proposed cadre training schedule is entirely understandable. As the project progressed the training of CD Cadres, and particularly the FOs, was intensified considerably. This included further training in group management, activity coordination, problem solving and the facilitation of participatory planning (refer to section II / 3.1.5 – 3.1.6 below). CD Cadres and FOs were also given specific skills training covering a range of new techniques and technologies for food processing, agriculture, animal husbandry, etc.¹² and training on gender awareness¹³.

¹² Refer to Section II / 3.2 for more details on the types of skills, techniques and technologies in which CD Cadres and FOs received training.

¹³ Refer to section II / 4. for more details on gender modules and awareness training for CD Cadres and FOs.

The workshop based and in-situ training activities were also augmented by a number of inter-village visits and inter-island specialised training and exposure trips¹⁴. The inter-village visits, which only occurred during the WATCH II phase, at first focused on trips to the Tiom and Pirime (Pit River) areas where CD Cadres and FOs received practical training in agriculture, animal husbandry and other skills. Later in WATCH II the inter-village visits were used to showcase the success of the more advanced WATCH CD groups so as to provide an incentive to other, less advanced groups. These included visits to CD group locations at Kimbim, Manda, Jiwika, Obiya and Hepuba, all around the Grand Baliem valley area.

The specialised training and exposure trips began in 1995 when four of the FOs went to Bogor to attend training in organic agriculture at the Ciawi Livestock Research Centre (Balai Penelitian Ternak Ciawi - BPTC) in Bogor. This trip proved to be very successful and consequently a further trip to the BPTC was organised and attended by a further seventeen WATCH CD cadres. This trip was also reinforced with an extensive pre-departure briefing and the production of a handbook for participants. Participants were also required to attend a debriefing, to prepare a report on what they had seen, experienced and learnt in the course of the trip and to implement new agricultural innovations within their groups after their return. In WATCH III this activity was further emphasised with two groups of 18 cadres, at least 40% of whom were to be women¹⁵, being sent on an exposure trip to East Java. Most of their time was spent attending a course at the Living Environment Education Centre (PPLH) at Seloliman Mojokoerto. These experiences went further than to teach the cadres new skills and to give them ideas for new product lines, the journey broadened their horizons and allowed them to see the toils and spoils of a developed province. One cadre in the 1996 trip commented that “even though they had less land than us they are more prosperous, because they work hard at working the land”.

Cadre & FO Incentives

Considering that in Irian Jaya it is fairly standard government practice to pay the members of communities for their involvement in CD projects, it was interesting that the project’s policy was to not pay cadres and FOs. As the success of most projects is based on their material outputs and the payment of local community members for their labour, paying people to do for CD activities is popular with government departments. Project staff took a different approach as they recognised that attitude and behavioural changes are very important and ultimately more sustainable than material outputs. Whilst the government approach increased the chances of material success, they effectively undermined the types of attitudinal and behavioural changes which WATCH staff sought to nurture.

¹⁴ Refer to section II / 5.1.1 and 5.1.2 for more detailed description of inter-village visits and inter-island cadre training and exposure activities

¹⁵ The target numbers of female participants in the WATCH III inter-island training and exposure trips could not be realised. Refer to Section II / 5.1.2 for further description and analysis of this problem.

Two major incentives were developed as an alternative means for motivating cadres and FOs to support village level implementation of WATCH activities. One form that these incentives took was the provision of gifts to FOs and cadres. For example, in 1995 each of the FOs and cadres were given a hat, shirt, rain jacket, a pair of shoes and a small backpack. The clothing and backpacks were also printed with the WATCH logo. Whilst this type of incentive proved immediately popular with some cadres and FOs, it also drew some notable criticism from others. A number of FOs complained that the money spent on these items would have been better used to feed or improve the lot of their families. Furthermore, whilst the presence of the WATCH logo on clothing and backpacks seemed in some cases to instil a sense of pride because they were wearing a kind of uniform, other cadres and FOs complained that they were being used to advertise the project. In either case the gifts provided by WATCH seem to have been quickly traded or somehow acquired by other members of the community. What can appear to be an act of generosity to some can be interpreted as paternalistic and self-promotional by others.

The second form of incentives was to ensure that CD Cadres and FOs were afforded greater access to opportunities for training or grants of equipment, materials, propagules, and or breeding stock. *This form of incentive proved to be much more appropriate than the gifts of clothing, shoes and back-packs because people could use these resources for further economic gain.* Furthermore, by rewarding diligent CD Cadres and FOs with the even greater access to training, equipment and materials required to further expand income generating activities they could act as role models reinforcing the type of diligence and industriousness being promoted by WATCH.

3.1.5 / 3.1.6 GROUP TRAINING, PARTICIPATORY PLANNING AND SELECTION AND IMPLEMENTATION OF CD ACTIVITIES

- Facilitate training, self needs assessment and group activity planning (PRA / PLA) within all groups.
- Select appropriate activities from the plans developed by community groups and provide support for the groups in their implementation.

Group Skills Training

Skills training activities covered a broad range of topics including new techniques and technologies (see section 3.2 below) as well as ideas relevant to social and economic development. At first skills training was mostly given to cadres who it was hoped would then be pro-active in transferring the new ideas to other group members. In this process WATCH personnel were to play a supporting role – through training and supervising the trainers and also by running regular group skills training activities when they were in the field.

During WATCH II, it was considered appropriate to provide more tailored skills training for cadres and FOs. Different groups in different areas were trained according to their perceived capabilities, needs and the availability of resources in their areas. This also meant that more skills training had to be conducted in situ. Whilst this put much greater demands on the projects logistical support system, it did have the desired effect of improving the uptake of new techniques, technologies and behaviours at the village level. In WATCH III group skills training was almost entirely conducted in-situ. This was made possible by the reduced size of the target area, the reduced number of groups and the presence of the three field based Cadre Supervisors.

In-situ training was by far the best approach for skills training. It allowed for a broad cross section of the community to become involved and it helped people feel more at ease because they were in familiar surroundings. The level of comfort experienced by the participants made them more open and receptive to the training. However workshops in a central location were advantageous too as they allowed for people from different areas to meet, compare experiences and exchange ideas.

Self Needs Assessment & Participatory Planning

After cadres had received their initial training in Wamena, they were expected to conduct training and group planning workshops in the villages for the broader communities. The cadres who had already been trained as trainers by WATCH now assumed the role of workshop facilitators with the assistance and supervision of the CD and/or WID Coordinators. These workshops employed Participatory Rural Appraisal (PRA) technique to provides opportunities for villagers to talk about their situations, identify problems and develop ideas and strategies to overcome such problems. Partway through the project Participatory Learning and Action (PLA) techniques were adopted as PLA is a modified version of PRA that has been widely used by World Vision agencies and others since the mid-1990s¹⁶. A major method used by the FOs and cadres, and one that was compatible with PRA/PLA was focus group discussion¹⁷. These discussions explored issues relating to health, to development priorities or aspirations, to gender relationships and imbalances and their impact on health and socio-economic development and to issues of sustainability.

PRA/PLA techniques which were applied by WATCH included the following:

- **Resource mapping** - To analyse the availability of resources and determine the communities perceptions of their environment
- **Ten seed method** – to determine the budgetary priorities the communities

¹⁶ For more details on the PLA methodology and techniques refer to Jayakaran (1994)

¹⁷ For further information on the use of focus groups in a Melanesian context refer to Hughes (1993).

- *Analytical table of skills / self skills analysis* – to determine the skills available within the group
- *Oral Histories* – to jointly analyse important past events which have effected the community and thus to help identify important social changes which have occurred and are occurring with the community.
- **Seasonal Calender** – to identify seasonal variations and work scheduling as perceived by the communities. For example the seasons for opening new gardens, seasons for the harvesting of specific cultivated or wild plant resources, the seasons when certain diseases are likely to be prevalent, etc. Such information is particularly important in guiding project interventions and developing appropriate CD approaches.
- **Preparation of group plans** – This is the culmination of PLA planning process which draws on information and ideas developed in the other PLA activities to establish locally appropriate action plans to overcome local problems.

Selection of Group Activities

Once that the group plans had been completed they were submitted to project staff for review and appropriate activities were selected for implementation. It was not always transparent what criteria WATCH staff used for agreeing to a development idea and as such decisions often seemed arbitrary to the locals. The Project Director at one stage requested that the criteria be more clearly defined but due to the staff's workload this wasn't followed up (see also section III for reference to this issue).

3.2 RESEARCH AND DEVELOPMENT

- To investigate, introduce and develop new product lines, agricultural techniques and post harvest processes for potential community income generating activities.

In order to support the establishment of new income generating activities amongst the CD Groups WATCH personnel undertook a program of research into and development of new product lines, agricultural techniques, alternative technologies and post harvest processes. As the project's principal concern was with PHC activities they did not have adequate resources to commit to in-depth research and development activities in these areas. Yet they were able to employ several approaches for researching and trialing product lines, agricultural techniques, alternative technologies and post harvest processes.

Staff looked into what kinds of development activities had previously been introduced into Jayawijaya and whether or not such innovations had proven to be effective or inappropriate and what factors had contributed to their success or failure. They also considered, based on research into potential new product lines, agricultural techniques, alternative technologies and post harvest

processes, what could be introduced to CD Groups in Jayawijaya. Existing or new product lines were also promoted and developed by WATCH staff if they were considered appropriate for application in Jayawijaya. WATCH personnel endeavoured to conduct trials including small-scale trials in or around Wamena and larger trials elsewhere. These larger trials were conducted in conjunction with CD Groups or with other institutions such as LIPI, YPY or IPB who WATCH encouraged to commit to more in-depth trials.

Where possible WATCH staff analysed the impacts that their product lines, agricultural techniques, alternative technologies and post harvest processes would have on the lives and well being of the target communities. These activities related to CD can be broadly grouped into food processing and home industry, agriculture and horticulture, animal husbandry and aquaculture, and encouraging entrepreneurial activities

3.2.1 NEW PRODUCT LINES

- Research, introduce and trial potential new product lines for community income generation activities.

Food processing, home industry & appropriate technology

Project staff provided training and in some cases equipment to assist CD groups with a range of new food processing and home industry activities. These included the production of soya products such as tofu, tempe and soy milk, oil pressing from peanuts and number of other locally available produce, cracker manufacture from sweet potatoes, taro, potato and cassava, flour milling from a wide variety of starch sources and from peanuts, groups made peanut butter and salted peanuts. Food storage and other cooking and baking techniques were also taught. Soap making was considered important for improving hygiene and a German volunteer from the SES came out to teach this.

Whilst not all groups took up these activities there were a number of notable successes, such as in Manda where people successfully made tofu and tempe from soya beans they had grown and they sold at the Wamena market. Similarly, groups in Karubaga sold tahu, tempe and peanut oil at the biweekly kecamatan market. Other products aroused people's curiosity and sometimes they caught on. Some examples of this can be found in Mamit and Kanggime where CD groups trialed salted peanut production, in Obiya, Wouma and Kurulu where they made potato and sweet potato chips, in Kobakma where people pressed peanuts to make oil and ground them to make peanut butter, and in Pyramid where a CD group baked and marketed their bread.

However, aside from such successes the overall level of application of new food processing techniques was fairly poor. The results of a survey of the communities' application of seven of the main food processing techniques promoted by WATCH which was undertaken as a part of the

WATCH III mid-term survey gives a fairly good picture of the relative popularity of these different foods amongst remote communities.

Table 4.

Percentage of Groups in the Sample who had applied this technique since they were trained	Post Harvest Process
73%	Peanut Oil
70%	Fried cakes using locally available ingredients such as cassava, banana, corn and soy beans
53%	Soy Milk
40%	Sweet potato flour (for super-oralite, power powder weaning food or other cooking)
27%	Sweet potato rice (Rice cooked with sweet potato flour).
20%	Sweet potato flour cakes
16%	Tofu / Fermented soy bean cake

It should be noted that amongst groups located closer to Wamena products such as Tofu and sweet potato crisps were much more attractive than in the more remote areas because groups could hope to sell these products in the shops and markets of Wamena.

In connection with food processing and home industry activities WATCH also trialed and promoted a range of appropriate technologies including fuel efficient and smokeless stoves (see section II / 2.3), toilet bowls (see section II / 2.4) and oil presses and other simple cooking utensils for use in post harvest processing activities. Several WATCH personnel also travelled to the IPB to learn about appropriate technology for food processing and at the end of the project a booklet was produced in three highland languages (Lani, Dani and Kimyal-Koropun/Sela) covering appropriate technology for food preparation.

Agriculture and horticulture sector

Reforestation, Organic Agriculture and LEISA - In the initial planning of the WATCH Project, soil conservation and reforestation were identified as areas of specific need within the community development program. Since the establishment of mission and government stations across Jayawijaya demographic patterns in many areas have changed considerably. Aside from the Dani of the Grand

Baliem Valley, most populations are believed to have quite broadly dispersed. The establishment of government and mission posts has encouraged many people to congregate in relatively dense concentrations around post. Whilst the swidden agricultural systems used by indigenous Jayawijayans seems to have been sustainable in a situation of low population densities, the shift in demographic patterns has led to considerable problems with soil erosion and diminishing soil fertility. In one area, Angguruk, the situation with soil erosion became so extreme that in 1997, following an earthquake and serious landslides, the government provided funding to relocate part of the community to help ease land pressure. In Kwiyawagi, an extremely high altitude village at 3,000 metres ASL, growing population pressure and resulting deforestation was also linked to increases in the extent of frost damage to sweet potato crops.

WATCH I attempted to alleviate these problems by encouraging community development groups to plant trees both for soil conservation and firewood. In the main valley systems of Jayawijaya, most people clearly understand the value of nitrogen fixing trees for improving soil fertility, providing shelter for crops and as a source of timber and firewood. Nitrogen fixing trees such as Casuarina, Albizzia and Erythrina are often planted in fallow gardens to allow for a shortening of the fallow period. When these gardens are cleared a few trees are always left within each garden plot as a source of green manure and for crop protection. Furthermore, it is a sign of continued use or occupancy of a piece of land to have human-planted trees on that land. Because there was a pre-existing culture of tree planting, project staff expected their reforestation activities to be readily accepted and particularly within the Grand Valley. However, they found that their approach suffered considerably due to the competition with the Forestry Service's (Dinas Kehutanan) reforestation programs.

The Forestry Service's program focuses on the fulfilment of a quota of trees planted each year with little concern for community development principles as local people are paid to plant the trees. WATCH's commitment to CD principles meant they eschewed the government practice of paying communities for labour inputs towards their own development yet they often found that community members would abandon WATCH's unpaid group activities if there were government projects operating in the area. Although government projects tended to operate in a particular area for a short period of time, their impact was long lasting. People came to expect payment for involvement in community development activities and also to associate certain types of activities with government projects. In the case of the Forestry Service's reforestation program not only was WATCH's community-based approach undermined in many areas, it was also believed to be negatively altering community perceptions regarding tree planting.

In other parts of Jayawijaya, where lower population densities entailed timber and firewood were less valuable resources and short fallow periods were less important, the culture of tree planting found in the densely populated valleys was largely absent. In these areas WATCH found it difficult to

promote the planting of non-fruiting trees as traditional tree planting focused on fruit and nut trees amongst these communities.

WATCH's initial approach to integrated agricultural activities was limited and they did not have an agricultural specialist in their team. During WATCH I close links were developed with personnel from the National Technology Research and Development Body (BPPT) who were conducting an agricultural program in the Tiom area and also with Dr. Fred Rumawas, a specialist in Irian Jaya agriculture from the Bogor Agricultural Institute (IPB) in West Java. Through the BPPT and Dr. Rumawas project staff were introduced to the LEISA system of organic agriculture LEISA, or low external input sustainable agriculture was formally introduced into the community development strategy at the beginning of WATCH II and continued to be promoted throughout the remainder of the project. LEISA is a type of sustainable organic agriculture involving terracing along contours, multi-cropping, mulching and alley cropping. It also promotes the protection of forest buffers around gardens, particularly on the up slope, and the utilisation of such buffer zones for the cultivation of shade tolerant crops such as coffee or cardamom.

When LEISA was introduced it was not a dramatic break with the kinds of agricultural techniques promoted during WATCH I. As the essence of the LEISA was the same as past activities the use of LEISA for the remainder of the project was more a matter of packaging the past techniques and approaches. By incorporating reforestation and soil conservation into a productive agricultural system, rather than promoting them as isolated activities, it was hoped that the lack of community interest in reforestation which had been encountered during WATCH I might be overcome. As the preparation and construction of contours and planting of tree crops could be likened to men's traditional role in opening up new gardens LEISA was also embraced by the staff because it involved activities that men might be more likely to take an active role in. It was believed that once the gardens were established the workload of women would be reduced, as they would no longer have to spend hours each day trying to till, weed and harvest gardens on a steep incline. Furthermore, the more permanent nature of the gardens would allow for them to be located closer to their homes than would be the case with a shifting agriculture system. Therefore it was hoped that LEISA would address gender imbalances in a culturally acceptable manner.

Although terraces had previously been built around Tiom and Makki by Yapelbap / ABMS and in some parts of the Lower Grand Valley, gardens on steep slopes are often built with simple stone terraces WATCH encountered considerable resistance to the idea of terracing. This was largely on the grounds that people felt terracing was inappropriate for sweet potato agriculture as the terraces would retain too much water and rot the sweet potato tubers. In recognition of these reservations WATCH altered the design of the terracing system being promoted so as to allow for greater drainage.

In 1995 WATCH personnel produced a handbook on LEISA for use in villages and in 1996 four field officers were sent to study LEISA and organic agriculture at a training centre in Bogor, West Java. This trip was so successful that a further fifteen field officers and cadres were subsequently sent for training. During WATCH III LEISA was given a very high priority. Almost 40 cadres were sent to East Java to receive special training in LEISA at the Seloliman Environmental Education Centre (PPLH) and groups were strongly encouraged to establish LEISA gardens.

Crop Diversification - WATCH focused considerable energy on encouraging crop diversification through the distribution of plant propagules and the training of cadres in how to cultivate and use the new crops. Throughout WATCH II and III these crop diversification was promoted in association with the LEISA system of agriculture described above and also in association with the nutrition gardens described in section II / 2.5. The types of crops introduced included:

- i) Fruit trees including durian, sweetsop, soursop, avocado, mango, jackfruit, pineapples, plums, persimmons, citrus, tropical apples, sapodilla,
- ii) Vegetables such as carrots, radish, eggplant, cauliflower, onions, potatoes, corn, Chinese cabbage, shallots, garlic, tomatoes, capsicum, etc.
- iii) Grains and pulses including peanuts, mung beans, red beans, soya beans and sorghum.
- iv) Cover Crops and green manure trees such as *Acacia* and *Caliandra*.
- v) Plantation crops, medicinal plants and spices including: coffee, turmeric, chillies, pyrethrum, aloe vera and Artemisia.

Propagules were acquired from a wide range of sources locally, in other parts of Indonesia and occasionally overseas. Most notably Dr. Fred Rumawas and BPPT played a considerable role in sourcing propagules in Java and beyond. It should be noted that in many cases the plants introduced were not completely new to Jayawijaya but WATCH did manage to introduce several new species, to improve the gene pools for existing crops through the introduction of improved varieties and to spread existing crops into areas where they had not been previously cultivated.

In some cases WATCH purchased propagation materials from one community and distributed them to another. For example, on several occasions WATCH purchased large amounts of pineapple suckers from the communities around Karubaga and Kanggime, where pineapples had been introduced by missionaries in the 1960s, for distribution to areas where pineapples were unknown or where propagules were unavailable. In another case WATCH arranged for the Department of Agriculture staff to procure several hundred banana suckers from local farmers for distribution to a group that was wishing to expand their existing banana production.

Crop diversification proved to be one of the most popular and readily accepted of the CD activities. People were keen to try the new crops primarily in the hope of being able to earn more cash

through selling them at the markets. Furthermore, many groups did make considerable profits as a result of WATCH's crop diversification activities. For example, by 1995 a group in Tangma had made more than 5 million rupiah from carrot selling alone. Other groups also managed to make considerable profits from market gardening. For example groups in Holowun successfully cultivated and marketed peanuts and soy beans, in Soba groups profited from the introduction of garlic growing, in Obiya and Kurulu groups grew vegetable greens and groups in Tiom found white onions and the new potato varieties provided by Dr. Rumawas to be very lucrative. It is very plausible that in the high altitude village of Kwiyawagi increased production of potatoes may have helped them survive the famine of 1997 as the potatoes were able to survive the frosts that destroyed their sweet potato crops at this time.

At times communities were reluctant to consume new crop lines particularly in cases where there was no commercial market for the new crops. There were instances where CD groups would plant certain crops for income generation but over time they would become accustomed to the new crops and eat the produce. In areas where access to markets was poor or in the case of crops that did not have a direct commercial value there was less chance that the groups would be convinced of the need to invest their time and energy in growing the new crop lines. It seemed that people were simply not motivated to increase their nutritional variation. In some instances WATCH personnel were able to overcome peoples reluctance to grow food for better nutrition by socially marketing the new products via key individuals within the communities. However, it was not always possible to find community members who were willing to take on the role of agricultural or dietary innovator. Furthermore, the range of new products being introduced also meant that they did not have adequate resources to commit to the social marketing of all new products (refer to section II / 3.3.6 for more information on social marketing).

Mushrooms - WATCH II collaborated with the Yasukhogo Foundation in conducting a trial into the cultivation of wood rotting mushrooms in Jayawijaya¹⁸. WATCH and Yasukhogo believed that mushrooms could be an appropriate cash crop for Highlands villages in Jayawijaya because when they are dried and stored, they are lightweight and thus are easily transported. Mushrooms are already an accepted food for most Indonesians and so it was felt that they could be easily marketed in Wamena. Furthermore, indigenous Jayawijayans already enjoy eating wild mushrooms when they are available so they are likely to be able to introduce the highly nutritious cultivated mushrooms into their diet.

WATCH provided a small grant to the Yasukhogo Foundation for the purchase of a very basic equipment and mushroom spawn to create a laboratory. Several species of mushrooms, including oyster mushrooms and shitake mushrooms, were successfully cultivated by the one of the authors of this report (RH) and several local assistants on a variety of locally available media including rice hulls, saw dust and local oak logs. Despite the initial success of these trials the program did not proceed beyond this point. This was primarily due to the fact that it would have required a considerable

¹⁸ For more detailed information on the mushroom cultivation trials refer to Hewat (1995).

injection of funds in order to establish a proper spawn laboratory and extend activities to the community level. In the absence of market research and a feasibility study no donor could be found for this activity. Moreover there were problems of continuity after the person responsible for initiating this activity (one of the authors of this report) left the Jayawijaya at the end of 1997 before an adequate transfer of skills and knowledge in mushroom cultivation techniques had been achieved.

Animal husbandry and aquaculture sector

Before attempting to implement animal husbandry and aquaculture activities, WATCH staff investigated whether or not these activities were suitable. *It is important to consider ideas to develop agriculture and animal husbandry in light of past experiences otherwise projects can waste resources repeating approaches that have proved to be unsuitable for the region.* The following is the conclusions from the staff's investigation.

Pigs – At the beginning of the project WATCH personnel made a conscious decision not to support expansion of pig raising and breeding activities in Jayawijaya. This decision was based on several observations regarding the nature and past experiences with pig raising in the New Guinea Highlands. Prior to the commencement of the WATCH project, local, wild boar type pigs were successfully cross-bred with domesticated breeds brought in from Australia but this activity never extended beyond a few individual pigs. Local people, it seemed, were not keen on the new pigs and it is arguable that the new pigs are less mobile than local breeds. Furthermore, whilst pigs, pork and pork fat are held in the highest possible esteem by local people of Jayawijaya, pig meat is considered to contribute very little to the nutrition of highland Papuans. This is due to the fact that the great majority of this meat is eaten in feasting situations where the human metabolism can only use a fraction of the nutritive inputs. Lastly, the WATCH staff considered pigs to be direct competitors with human beings in the sense that New Guinea pigs live on the same staple as other people and so the bigger the pig population the more work there is for women. Some academics believe that the big ritual pig feasts are important in maintaining the balance between human and bovine populations and that the feasts may be instigated by men in response to increasing complaints from women that their workload is increasing too much. WATCH personnel also felt that the target communities were already highly skilled and knowledgeable swineherds and thus felt it was more appropriate to focus other types of livestock and thus raise the diversity of livestock in Jayawijaya.

Therefore WATCH did not work on stimulating pig farming. Instead they promoted pigs being fenced instead of roaming about. When pigs roam about they can destroy gardens and be more susceptible to theft. Moreover they saw the need for pig-pens because pigs posed a health risk when they were living so close to humans. However this initiative met with stiff resistance in most areas as people did not like to work extra hard to feed their pigs and it is easier for women if pigs can find food themselves. By the later stages of the project, staff had recognised that the system of pig raising was too closely linked with all aspects of Jayawijayan economic, ritual and social life for there to be any

immediate likelihood of people changing their behaviour and penning their pigs. Consequently, whilst the penning of pigs continued to be an ideal of the project, it was not an issue that was emphasised or strongly pursued, but rather an option that was occasionally discussed with CD groups.

Cows - Prior to the inauguration of the WATCH project both beef and dairy cattle raising had been attempted in various areas across Jayawijaya District. For example, the Catholic Church ran an animal husbandry training centre with particular focus on cattle raising at Sinepup from the early 1970s through until the mid 1990s. This project had limited success and when combined with the encroachment of Wamena town and the consequent higher land values the church was compelled to abandon the project and subdivide the land. The project however did manage to establish herds of cattle at several locations around the Baliem Valley as well as at several sites in the predominantly Catholic eastern subdistricts of Ok Sibil, Ok Bibab and Kiwirok. This project also raised some dairy cattle and for a time sold small quantities of milk, mostly to local missionaries. A number of Protestant missions have also established small herds of beef cattle in various areas across the district and WVII have conducted a cattle project in Tangma and Kanggime in the late 1980s. More recently, from 1996 – 2000, a German Consultant to the District Planning Body has attempted to establish a dairy cattle industry in Jayawijaya. Overall though, cattle farming is considered to be not economically viable for most communities.

In the light of these former experiences and on the advice of several experts on animal husbandry in PNG, WATCH considered beef cattle to be of limited suitability in most of Jayawijaya. This was due to a number of reasons; there is a lack of fencing so cattle run wild and then need soldiers to shoot them, people are unfamiliar with raising this type of animal, there is not enough flat land for cattle (Jayawijaya has heavily populated valleys), and that transportation from the eastern villages is impractical. For instance in one case a cow was heli-lifted out of the Kurima District at a cost of Rp.1,000,000 whilst the cow itself was only worth Rp.2,000,000. In spite of these drawbacks there is no doubt that cattle farming will be tried again. If this is to be so future planners should keep in mind that beef cattle are best off where there is much flat land unused at any one time and that Bali cattle are the better breed. Dairy cattle are considered impractical because for good milk production and animal health, dairy cattle are dependent upon the availability of high levels of leguminous fodder and leguminous pasture does not occur at altitudes below about 2,000 metres altitude in New Guinea. Leguminous fodder can be cut from a variety of trees and shrubs but this would make cattle raising ridiculously labour intensive. Also there is no real market for dairy products in Wamena outside the small expatriate community and it seems unlikely that a taste for dairy products could be promoted amongst the local community.

Sheep - Even though sheep farming was trialed in WATCH I and II, because of their requirements for leguminous fodder and relatively complex care requirements sheep were considered to be unsuited to most areas of Jayawijaya. As with cows, sheep raising had also previously been trialed in a number of

areas across Jayawijaya. Most notably the Bethesda Health Foundation (YKB), with assistance from the Australian and New Zealand Governments ran a sheep raising at Kulegaima, just south west of Wamena with an associated spinning and knitting program based in Wamena. The project commenced during the late 1980s and ran through until 1996 when the breeding herd was finally broken up and distributed to community groups under the supervision of the Yasukhogo Foundation (YPY). This project experienced considerable disease problems and the leguminous fodder had to be cut and brought in on a daily basis which increased the labour needed. Furthermore, the quality of wool produced was quite poor and the garments produced were extremely expensive by Indonesian standards. As a result the garments were basically priced out of the local market, with the majority of them being purchased by the *Bupati* to give as gifts to visitors.

During WATCH I & II the project purchased sheep from YKB / YPY for distribution to communities, mostly in Kurima Sub-District. These sheep were intended to be used as a source of meat rather than wool. The distribution of sheep was discontinued after YPY finally broke up the breeding herd in 1996.

Goats - Although goat farming was promoted during WATCH I, II & III, keeping goats is often considered to be a high-risk activity in Highland Papuan communities. There was a considerable market for goat in Wamena as most Javanese and many other ethnic groups residing in Wamena have an open preference for goat especially around the time of the Muslim festival of Idul Adha. But the lure of money to be made is offset by the risk of raising goats as they can jump or even chew through native fences and damage the gardens within. This can cause the owner of the goat to have to pay out a lot in compensation. As a result some people were wary of raising goats but other groups were still attracted by the commercial potential of goat raising. Throughout the project WATCH provided many groups with goats as breeding stock and also ensured that groups receiving goats were given specific training regarding their requirements and how to adequately cage or restrain goats.

Chickens & Ducks - WATCH helped CD groups obtain chickens and ducks right throughout the project as these proved to be highly popular with local people. Asian chickens were generally preferred to European breeds as they were considered tastier, they were good for trading with others (especially Indonesians from other islands) and they were low maintenance as they don't need to be fed or caged (they will sleep in trees). A major problem with chicken farming is protecting them from theft, as chickens seem to be designed in just the right size to stick under your arm and run. Another problem was that if chickens were not caged then chicken excrement would repulse people from eating produce grown near their villages. WATCH therefore strongly encouraged the caging of chickens and often provided tools and communities to aid with the construction of cages. Its interesting to note that eggs were rarely eaten as reproducing chickens was considered more valuable. Duck raising activities were most successfully established in the Sela Valley (near Koropun), Mamit dan Manda.

Rabbits – Rabbits too were farmed in all phases of the project and were popular with many groups but mostly to trade with. The Catholic Church established a rabbit-raising project at Kurulu in the early 1970s and also distributed livestock to communities around the Baliem Valley and throughout Ok Sibil, Ok Bibab and Kiwirok. Today little or no evidence of these activities remains. The Australian Baptist Missionary Society was much more successful in establishing rabbit raising amongst Lani communities around Makki, Tiom and Pirime (Pitt River). Other Protestant missions also followed the lead of the ABMS but rabbit raising was never successfully established in Kurima. It was hoped that aside from income generation and added protein, rabbits might provide fur for swaddling babies or for other uses. This did not really take off though many tourist items are nowadays made out of rabbit fur rather than cuscus or possum. As can happen in development, the fur has been a success in ways not anticipated by project planners.

WATCH were highly successful in popularising rabbit raising across Jayawijaya, particularly in areas where protein sources were limited. In 1995 LIPI commented that WATCH's promotion of rabbit raising had brought about a veritable explosion of the rabbit population in the Mapenduma area. Unfortunately, during Mapenduma hostage crisis of 1995-1996 this rabbit population was decimated as people quickly consumed their remaining livestock hiding in the forest. In some areas groups abandoned rabbit raising and/or consuming breeding stock because the groups became disgruntled with the shortage of markets for rabbit meat and/or the work involved in cutting and carrying fodder for the rabbits. Other areas where WATCH was successful in establishing rabbit raising activities were in Ninia, Soba and Holuwun.

Aquaculture - WATCH dabbled in crayfish, frog, snail and fresh water mussel farming but this was only a small component of their program and the results were limited. The only long lasting outcome of these experiments was the distribution of golden snails to ponds in some areas as famine foods.

A more significant initiative was fish farming. WATCH introduced mostly goldfish into various areas and people came to like eating and selling the fish. There were unforeseen problems with fish farming. At one stage in Manda floods destroyed good ponds. Another example of this was found in Obiya where the community had managed to successfully farm fish and when it was time to harvest, the community decided they would like to invite the Director General of Health to help harvest as they heard he would be in town again. After all he was the one to distribute the fingerlings to them a year before. Two weeks before he was due to arrive, the fishpond was emptied by thieves. The great irony here is, of course, that if people had more disposable income because their CD initiatives were fruitful there would be no need to steal. Fish farming was not continued with in WATCH III as it required a large initial labour input and was not hugely popular.

Bees – Prior to the WATCH project honey production had been pioneered in Tiom and Wamena by the government research agencies BPPT and LIPI. WATCH adopted this initiative and spread it to other

groups. This was achieved by the lengthy training of cadres, by bringing in more equipment, helping people to construct hives, holding workshops on bottling and labelling honey and inviting experts in to train locals. For instance in 1995 a man from the German Senior Expert Services (SES) came to train locals in rearing queen bees. As the honey made from WATCH's bees was of very good quality, it was a rather lucrative activity. Unfortunately though the supply of honey was erratic due to problems with mites and disease (varroa and tropilaelaps). The CD Coordinator dealt with this at different stages by requesting bees and drugs from Java and (in 1996) by working with the CSIRO on controlling bee mites. During WATCH III there was less focus on this activity due to the desire to consolidate community development by focusing on a more limited range of activities. As bee keeping had not previously been introduced into the Kanggime and Kembu-Mamit areas, (during WATCH I and II it had mostly been promoted in the Grand Valley and Kurima areas), it was considered to exclude bee keeping activities from the WATCH III design. At the end of the project LIPI, BPPT and the Department of Animal Husbandry continued to work on honey production and at least one WATCH group. A number of WATCH groups continued with bee-keeping activities after the completion of the project. The most notable of these was a group in Sinatma on the outskirts of Wamena, who, under the supervision of the former WATCH Cadre Supervisor, Tius Kogoya, were successfully operating a bee-keeping business with around 40 hives.

3.2.2 MARKET RESEARCH AND FEASIBILITY STUDIES

Some feasibility studies were done for activities associated with promoting entrepreneurs (see section II / 3.4.1) but in general very little market research was done. In WATCH I there was a plan for the community to conduct feasibility studies with the PKK but this was abandoned. It was considered more practical to discuss feasibility with the villagers and other groups like NGOs. In WATCH III there was a consideration of markets within the baseline survey. Refer to section I / 1.15 and III / 6 for more discussion on information and issues relating to markets and marketing in Jayawijaya.

3.2.3 GROUP TRAINING

Refer to Section II / 3.1.4 above.

3.2.4 / 3.2.5 EQUIPMENT AND MATERIALS GRANTS & REVOLVING LOANS

- Provide equipment and materials such as breeding stock, propagules and tools to CD groups.
- Establish a system of revolving loans so that grants of propagules, tools, equipment, etc, provided by project staff can be rolled over to other groups.

While WATCH did provide materials to support groups implement their CD activities, they were wary of creating a 'handout mentality'. To mitigate a 'handout mentality' WATCH established a system

whereby the resources needed to develop new products were loaned on a revolving basis. That is, the initial amount of commodities (ie. seeds, beehives, chickens, rabbits, pigs, goats, sheep) were to be passed on once the commodities were reproduced. In-kind loans were preferred to cash loans for two main reasons. Firstly as it is often not easy to procure what is needed in remote areas, cash loans would be of little value. Secondly the history of the management of IDT funds has a very poor record with very little to show for millions of rupiah in investment. However, for the following reasons revolving loan funds came to be an administrative nightmare:

- Use of in kind loans made it difficult to account for repayments for its harder to deal with loaning produce than it is to deal with a straight cash ledger.
- Because the membership of groups fluctuated, it was hard to keep track of loans after they were dispersed.
- Loans were hard to roll over if people do not want the produce of the neighbouring group.
- The provision of in-kind loans limits the flexibility of loans.
- People can easily claim that livestock have died or crops have failed and thus abjure responsibility for repayment of loans.
- It is difficult to incorporate interest into an in kind loans system. Without realistic levels of interest revolving funds will always diminish themselves through running costs and loan defaults.

Another issue that emerged earlier in the project was that many people were unwilling to pass shares on to the next group. Often the more powerful and wealthier members of the group were unwilling to pass the loaned produce on to poorer members of the group. It also appeared that many did not understand the concept of the revolving loan system and were more likely to interpret the produce as another aid handout. Solutions were suggested including the introduction of contracts to sanction sharing behaviour along with corresponding punishments. This system would need to be made very clear and be well understood if it were to be implemented. Another option was to introduce the system slowly and reward positive performance. For example, if a person starts with two pigs, they can only get two more pigs if they have passed on two pigs to another person.

In WATCH III there was an increasing demand for cash grants, particularly by cadres Kangimme. It is not certain whether this represented greater self-reliance, whether people or other community organisations hoped to personally gain from cash grants, or if they preferred money for other reasons. There were exceptions to the WATCH's policy of using revolving loans but they tended to come later in the project. For instance in 1997 the *Bupati's* gift of three food selling carts were given to successful cadres from around Wamena and WATCH presented 7 goats to groups in Kangimme. These items were given as rewards for their good CD efforts rather than as part of the broader revolving loan scheme.

In many ways the revolving loan system was not effective however it did manage, in some cases, to spread initial inputs beyond the target group. Perhaps if this system were to be used in the future, chances of rolling over materials between communities would improve if they 'fitted' with traditional exchange patterns.

3.2.6 SUPERVISION AND MONITORING

Supervisory Roles

During the initial phase of the project the community development coordinator was allocated primary responsibility for supervising all activities. By the end of 1993 this arrangement had to be altered, as it was proving physically impossible for one individual to adequately supervise over 130 different groups over an area in excess of 50,000 km² in area. It was decided that various CD cadres/field officers should take responsibility for the supervision of different CD groups and so in 1994 all coordinators visited target areas together. This strategy was beneficial in that it tended to reinforce the integrated nature of the project, it was good for staff morale and it cut travel costs as they could share the hire of transport. In 1995 these arrangements were deemed to be working well and the secretary, bookkeeper and janitor were also allocated groups to foster and supervise.

At the beginning of WATCH II it became apparent that more orderly supervision of CD activities was needed and to achieve this the project required more funding and more FOs. Until 1994 there was only 7 staff to cover around 120 villages. In the PID for WATCH II more funding was allocated for this activity and more local field staff planned to maintain adequate support and communication with villagers. WATCH also drew upon outside support for this high priority task. At a meeting with missions in February 1995 church leaders were asked to help support and encourage coordinators and FOs. Despite these arrangements, consultation with members of CD groups was a managerial headache and it took up a considerable amount of the project personnel's time. Local people too, were put out by having to queue up outside the WATCH office for long periods of time.

During WATCH III another approach was trialed whereby three project personnel were permanently located in the field and so could take over the majority of the supervisory duties. This approach was a good way to increase exposure to and capacity for supervising CD groups. It would not have been possible to use this approach earlier in the project as because CD groups were spread over such a large area, that it would have required 20 or more field-based officers to achieve similar level of coverage enjoyed in WATCH III. Moreover, the success of supervising in WATCH III is largely due to the personality and skills of the three field officers themselves. It is unlikely that three such suitable and experienced individuals who were willing to take up residence in an isolated mountain community could have been found in 1991 or 1994.

WATCH personnel constantly rethought their approach towards supervising the CD activities in light of the changing circumstances. These altered supervision arrangements highlights the flexibility of approach so characteristic of the WATCH project.

Guidelines for the Evaluation of Group Progress – The ARIFF system

From the beginning there were difficulties measuring the progress of CD groups and therefore in adequately evaluating the impact of project interventions at the community level. A potential solution to this problem was come across in the first year of WATCH II when project staff were introduced to the ARIFF system which soon became the central plank of the monitoring and evaluation system at the community level. This monitoring system for CD group activities was originally developed by the DOH Directorate for Community Participation in order to monitor and evaluate groups participating in the government's *posyandu* program. The ARIFF system relies on a table of indicators for group progress (including indicators for measuring both material and attitude change) against which point scores are allocated. After CD groups began certain activities or fulfilled other criteria as laid out in the indicators, WATCH staff awarded them relevant point scores. At various points in time these scores were tallied and the figures generated gave staff an indication of how far each group had progressed. Indicators that weren't relevant to the group being measured were not counted in the final score.

To their credit, throughout WATCH II project personnel sought to modify this system and develop their own "Guidelines for the evaluation of group progress" to make it more relevant to the local situation and the specific context of the project itself. This included the established their own system of indicators along with a results table that ranked groups according to four levels of self-reliance¹⁹. These indicators covered all project interventions for CD groups including: group organisation, introduction and use of sweet potato flours / powders, use of appropriate technology, application of new agricultural techniques (LEISA / Organic Agriculture), introduction of new crops and progress in animal husbandry, establishment of *posyandu* and *pos obat desa*, application of gender principles and so on. The following table lists the ARIFF scores for the groups during WATCH II.

¹⁹ For a list of the ARIFF system indicators and self-reliance ranking refer to the WATCH Project Completion document.

Group Progress Stages		1995	1996	1997
Stage 4	Berkelanjutan (Self Sufficient)	0	1	3
Stage 3	Purnama (Advanced)	5	8	14
Stage 2	Madya (Medium)	30	39	41
Stage 1	Pratama (Basic / Begginer)	25	10	1
Total No. of Groups Surveyed		60	58	59

During WATCH III this system was simplified somewhat the number of ranking level reduced from four to three. This alteration was made on the grounds that it would make the system easier for cadres and group facilitators to understand and follow. Due to problems with the group structures at the time the WATCH III Baseline survey was conducted data on group progress could not be gathered in 1998 – 1999. The results from 46 groups surveyed as part of the mid-term survey in 2000 are displayed in the following table.

Group Progress Stages	Total	%
3. Self sufficient	3	7%
2. Group is progressing	20	43%
1. Group has not progressed	23	50%
Total	46	100%

Despite some limitations and on-going problems with determining appropriate indicators, the ARIFF system proved very useful. However, problems were encountered in terms of very few groups progressing through the WATCH ARIFF rankings. This is likely to have less to do with any objective reality and more to do with the targets set by the ARIFF rankings being too high. The utility and suitability of the ARIFF system is reliant upon the validity of the indicators used in generating point scores. Whilst WATCH personnel were quite successful in modifying the indicators used to make the system more relevant to their monitoring and evaluation needs, these indicators were still set by the project staff who are part of an outside culture. As such the scoring is likely to directly reflect the development priorities of the WATCH staff and not the target groups which may create a false picture of a groups progress. Setting the rankings too high is not only insensitive to changes that may have happened by are not detected, it might discourage groups who feel they're not progressing.

The ARIFF system is only a tool and as such it is only as good as its indicators. Therefore refining and improving the indicators so they are truly relevant to local circumstances is important. If the indicators are set by outsiders, chances are they will not be truly relevant. It is possible that a CD group may have learnt a new technique or acquired a new technology and tried it but found that, from their point of view it was not as appropriate as it seemed to project staff. In such circumstances failure to continue with that activity should not be equated with failure to advance. If the ARIFF system is not constantly renegotiated with target groups, it is assumed that people are empty vessels and can be filled with new ideas and skills.

3.3 MOTIVATIONAL & PROMOTIONAL ACTIVITIES

3.3.1 / 3.3.2 GROUP COMPETITIONS & EXPOS

On two occasions during the course of the WATCH project group competitions were conducted. The purpose of these competitions was to motivate groups, and particularly men, to work harder on community development activities. The first competition was conducted at the end of WATCH I while the second was conducted on the 20th – 27th of October 1997. This latter competition was planned to ritualise the project's disengagement with the groups and applaud all who participated in the project initiatives and so eight groups that represented eight target regions participated in the competition. Judgement criteria included: program integration of agriculture, health and gender activities within the group, performance of group activities, knowledge and skills on farming, agriculture, health and appropriate technology. The group competitions were conducted with the cooperation of the District PKK and the Office of the Bupati's Social Division.

The response of participants to the competitions was very positive. In general participants commented that it would be good to hold regular (annual) competitions and that besides the motivational value of the competitions they provided a good opportunity to discuss and compare activities and issues with other groups. The Bupati too was positive about this idea and after the competition held at the end of WATCH I he organised a similar agricultural competition as part of the Indonesian Independence Day celebrations in 1995. WATCH groups participated in this competition and WATCH personnel also helped with judging and used the opportunity to promote new products and technologies such as sweet potato flours.

Aside from the competitions WATCH personnel and cadres / FOs were able to display the results of their efforts at the expos that were held in Jayapura. Here they promoted new products and technologies such as sweet potato flours and super-oralite to a broader province wide audience.

Competitions and expos, particularly when they involve displaying agricultural produce, is an appropriate activity in Melanesia. Most Melanesian cultures have traditionally engaged in a kind of 'agricultural competition' in the form of quite elaborate displays of produce in important ceremonies. Also many Melanesian cultural groups engage in competitive exchanges, where people attempt to show their wealth and prowess as agriculturists by displaying impressive amounts of produce. Competitions seem to have motivated mostly status conscious men to work harder on agricultural and other CD activities.

3.3.3 IEC MATERIALS ON APPROPRIATE TECHNOLOGIES, LEISA ETC.

To support training and promotional activities, WATCH personnel produced or collaborated on the production of a number of Information Education and Communications (IEC) materials relating to new products, appropriate technologies and techniques. During WATCH I a booklet was produced on bee keeping²⁰ with assistance from a volunteer German technical assistant while in WATCH II a range of publications were produced. There was a booklet produced on LEISA (1995), a booklet on sustainable agriculture (1996), a training manual on organic agriculture (1996) that was prepared as an adjunct to the specialised cadre training and exposure visits to Bogor, and a booklet on appropriate technology for village midwives which was produced for distribution at the 1995 Provincial midwives jamboree. Furthermore, some material on appropriate technology and LEISA agriculture were also incorporated into the Gender Awareness and Gender and Development Modules²¹.

During WATCH III a booklet was also produced on "Simple technology to preserve and process sweet potatoes." The book was written by the GAD Coordinator, Ms. Susana Srini, and the GAD Assistant Mr. Viktor Malissa and Training Officer Ms. Marta Kombong and was published in cooperation with the national daily newspaper KOMPAS with funding from the Natural Disasters Trust Fund. This handbook includes information on how to process and preserve sweet potatoes as well as a number of recipes that can be prepared using dried sweet potatoes or sweet potato flours. The book was translated into three Jayawijayan languages Lani, Dani and Kimyal. These publications therefore have a theoretical target group of almost 400,000 people in the highlands of Papua Province.

While translating such a booklet was an admirable task it should be remembered that these languages often display a high degree of dialectical variation. For example, linguists generally consider both Dani and Yali to incorporate three dialects each whilst Kimyal is recognised as having two dialects. Lani on the other hand, has not been formally divided into separate dialects by linguists but it still displays a high degree of variation across its vast and rugged range. Furthermore, most of the people in this group have extremely poor literacy skills even in their own local language, which had no written form until very recently when missionaries began producing local language Bibles. These

²⁰ See (WATCH 1993)

²¹ See (Srini 1995, Srini 1996) and also section II / 4.1

factors will undoubtedly affect the geographic range across which this booklet will be intelligible and the ability of community members to read and understand this booklet. For further information on the problems experienced by project staff in designing IEC materials refer to section II / 2.1.2 and section III / 7.

3.3.4 / 3.3.5 LEISA & NUTRITION GARDEN DEMONSTRATION PLOTS

Another approach used to promote new agricultural techniques was to encourage groups to establish demonstration plots or 'demplots' in prominent locations where they could serve as an example to the broader community. This approach was employed to promote LEISA agriculture in WATCH II and III as well as dietary diversification through home nutrition gardens during WATCH III²². While the idea appeared good the idea to establish demplots generally met with either disinterest or resistance as most Jayawijayan agriculture is actually practiced on a fairly individualistic basis. After an initial group effort when men open new gardens, gardens are owned by individual families and each bed within the gardens are considered to belong to individual women. As such the idea of establishing group demonstration plots was fraught with problems relating to the division of both inputs and outputs.

There were, however, a few cases where successful demplots were established. Many successes were a direct result of the support of a charismatic leader who would encourage others to join in and also would take ultimate responsibility for maintaining the demplot if other group members failed to do so. Demplots could also sometimes work when separately owned and tended gardens were in close proximity to each other. In this manner a large demplot mixed farm was established near the Lokale tourist cave at Wosilimo. The drawback to this approach was that demplots can look patchy when some people do not maintain their site as well as others. Overall though, this approach is preferable to having a communal demplot being undermined by a few disinterested or unmotivated group members.

3.4 SMALL ENTERPRISE & COOPERATIVES

- To support groups and individuals in the establishment of legally registered business activities and community cooperatives.

In some cases, local people took advantage of the opportunities created by the project to initiate entrepreneurial activities. Some examples include a cadre from Pyramid who used the project as an opportunity to conduct a feasibility study of the bread industry in Wamena and who then made and sold bread and another who started a small business making and selling latrines. Also in 1997, the *Bupati*

²² See section II / 2.5 for more information on dietary diversification and nutrition gardens.

provided three food carts (*kaki limas*) to the WATCH project so that several local people could attempt to sell snacks like cakes, fried vegetables and meatballs. This was a section of the economy that is monopolised by traders from other areas of Indonesia.

More formally though WATCH sought to improve the level of a financial wellbeing in the communities through facilitating the formation of cooperatives, particularly during WATCH II. WATCH intended to help groups and individuals that displayed the ability to run a small business to establish a *Usaha Bersama (UB)*, which is a small business partnership that has legal status in Indonesia. The project offered simple management training for those groups wishing to form a village cooperative and small kiosks were opened in some villages such as Manda, Holuwon, Soba, Koropun, Mamit and Kutime (Kanggime). The cooperative in Kutime (Kanggime Sub-district) was managed by a local Yayasan (Yayasan Obor Suka Cita Kutime), which plans to further develop the cooperative as a village economic institution with a view to fostering further community development activities. In order to support the proposed development of this cooperative in Kutime the Project Accountant (Ms. Leni Marlina) provided additional training in the management and financial administration of cooperatives and the head of the yayasan was also sent to the NGO management and financial administration training with YIS in Solo, Central Java. The process of establishing cooperatives took longer than expected due to the different expectations and demands of groups. It was hoped that these cooperative kiosks would act as a site for the dissemination of health information and products and as such they would be a step towards an independent Pos Obat Desa.

By August 1996 many small initiatives were overshadowed by a much larger cooperative (the *kedai*) based in Wamena. Here, groups could sell their products and also buy goods and produce from outside at a reduced cost (such as impregnated mosquito nets). After land ownership issues arose, the *Bupati* provided some land for the cooperative and two people from YPPWI (a Jayapura based NGO that specialises in microcredit) trained people on initiating and supervising activities. There were tensions about management and control issues by different shareholders, including groups developed by project staff. WATCH tried to rectify this with management training. Because the issue of management proved so elusive the PKK were invited to execute all activities associated with setting up and running the cooperative.

3.5 COMMUNITY FOUNDATIONS

As part of their strategy to support the continuity and sustainability of project interventions WATCH sought to support the establishment or develop the capacity of community based foundations supporting health, gender and community development activities. During WATCH II project staff assisted the Yasumat Foundation to be formalised while in WATCH III staff nurtured the growth of a new district wide women's foundation, Yayasan Humi Inane (see section II / 4.6.2), and several local community based foundations including Yayasan Obor Suka Cita Kutime, Yayasan Hanadana in

Manda and Yayasan Yuma di Kembu. During WATCH III, ten representatives from local NGOs were sent to Solo in central Java to undertake training in NGO management and financial administration. Helping to develop NGOs was considered crucial for the sustainability of the project.

3.6 VILLAGE INFRASTRUCTURE DEVELOPMENT

- To support community income generation activities, access to health services and accidental loss of life through improving transportation, water supply and sanitation infrastructure.

3.6.1 PRELIMINARY SURVEYS

- Conduct surveys to determine areas of need and to assess the feasibility, cost and level of community support for specific village infrastructure development activities.

In the course of general field activities WATCH tried to assess the feasibility, cost and level of community support if they were to initiate certain village infrastructure development activities. At times it was difficult to assess the most suitable place for infrastructure. For instance locals will invariably argue they need a bridge but it is less clear whether their preferred location is the appropriate one.

3.6.2 BRIDGES

- Work with local communities to construct safe and permanent bridges

WATCH I aimed to facilitate the construction of a total of five suspension footbridges in different locations across Jayawijaya. This target was exceeded with a total of 14 bridges completed by the end of the first phase. The reasoning behind the construction of footbridges was to:

- i) to increase access to health care services;
- ii) to decrease the distances involved in travelling from remote villages to administrative and market centres and thus;
- iii) to increase economic opportunities;
- iv) decrease the high number of deaths occurring as a result of attempts to cross flooded rivers or to repair damaged bush material bridges.

Bridge construction was continued in WATCH II. During 1994 - 1995 the project built a total of eleven bridges in areas as diverse as Koropun, Sela, Soba, Lolat, Holowun, Kobakma and Mikma. Three of these bridges, in Koropun, Soba and Holowun were built with the help of Chris Mattinson, an

Australian missionary builder. During 1995-1996 WATCH decided to focus on the construction of one good bridge rather than many smaller ones. In collaboration with the ADRA, the Refsos and the people of Desa Minimo II, a long hanging bridge was built across the Baliem River. This was a very impressive effort for the bridge connected 5 villages across a 100 metre stretch and benefited the locals greatly because in the past people had to either ferry across on a log raft or walk a much further distance to cross another bridge. The community involved in building the bridge came to charge a few rupiah to those who used the bridge in order to cover the costs incurred in making it and to make a bit of profit. During 1996-1997 WATCH assisted communities in constructing two bridges in Kurima (Soba and Koropun), two bridges in the Lani areas, two in the Grand Baliem Valley area and one at Iwur in the Ok Sibil subdistrict.

During interim extension the only activity in this section was the completion of bridges in the Soba and Ninia areas which had been started during WATCH II.

WATCH III aimed to work with the local communities in constructing three bridges. The sites selected for these bridges were at Kutime, Wuluk and Kage in the Kanggime and Kembu-Mamit subdistricts. As WATCH staff experienced significant restrictions on their travelling to the field during 1998 – 2000 the preparation of community groups for involvement in bridge construction activities fell behind schedule. This ultimately led to a conflict between the project's community development principles and the administrative imperative of having all activities completed within the project time frame. Ultimately, AusAID granted a time extension for these specific activities beyond the completion date for the project.

In the course of bridge construction activities WATCH collaborated with a range of partners including both project and non-project communities, NGOs such as YPMD, ADRA, missions and missionaries and government departments, most notably the Department of Public Works, (DPU). In the later stages of the project, staff tended to work more closely with fledgling local NGOs for these activities. Over time project staff endeavoured to strengthen collaborative efforts with target communities in line with community development principles. During WATCH II staff attempted to improve community involvement in bridge construction by conducting better social preparation, training locals to build the bridges and reducing the levels of project support provided, particularly for local transportation of materials. In 1996 the CD Coordinator met with YPMD to discuss the supply of trainers to train locals in making safer hanging bridges in Soba, Holuwon and Kobakma.

3.6.3 TRACKS

- Work with local communities to upgrade dangerous sections of mountain footpaths

The track improvement activities planned as part of WATCH I aimed to upgrade some 50km of unsafe sections of mountain pathways. This target figure proved to be unrealistic and ultimately only one section of track running along a major precipice between Ok Sibil and Apmisibil was upgraded. Additionally, in 1994-1995 WATCH assisted a community at Aboy-Luban in Ok Bibab subdistrict to upgrade tracks. This helped to lessen the travel time between villages from eight hours to five. After WATCH helped construct the large hanging bridge over the Baliem river, the people of Minimo went on to create a broad track from the bridge along the bank of the Baliem river. *Whilst bridge building and airstrip upgrading activities seemed to be popular activities, track improvement were less attractive to many groups.*

3.6.4 AIRSTRIPS

- Work with local communities to build or upgrade airstrips.

During WATCH I the project assisted and facilitated several communities with constructing or upgrading airstrips. For example early in the project they assisted the community at Ndundu in Kambu-Mamit Sub-district with the upgrading of the airstrip so as to make it serviceable by single engine Cessna aircraft. They also assisted with the lengthening of the airstrip at Karubaga so as to make it serviceable by the larger Caravan aircraft operated by the MAF.

During WATCH II, project staff also collaborated with the government (Sub-district Administration, Bappeda, Bangdes and DPU) and the local community at Iwur in the construction of a new airstrip including drainage and fencing. This activity was directly instigated by the Bupati and the Camat of Ok Sibil who wished to see more of the remote Star Mountains communities opened up to government services.

In conducting these activities WATCH maintained a strong ethic of community participation through its requirement that communities must contribute labour and local materials free of charge. For example, WATCH pulled out of negotiations to upgrade the airstrip at Kanggime when it became clear that the communities expected payment for their involvement. The *Bupati* recognised the value of this approach when he commended the project staff and the communities involved for setting an example of appropriate community development. He also stated that, it would have cost millions of rupiah if outside contractors were employed and that the opening of airstrips at Ndundu and Iwur had significantly increased access to what had previously been some of the most remote parts of the district.

While the Bupati's comments may be true, there is ample historical evidence showing that it is not difficult to mobilise communities to build and improve airstrips in New Guinea. Indeed there are a number of documented cases of communities throughout the New Guinea Highlands, including in Jayawijaya, who have constructed airstrips without any external assistance or encouragement in the

hope that the presence of the airstrip will attract planes that will bring wealth and material goods to the area. It should be noted that whilst construction of airstrips is a relatively easy activity to promote, their ongoing maintenance is often a considerable problem. In Irian Jaya this problem is eased somewhat as there is a fairly clear division of jurisdiction with the Mission Aviation Fellowship (MAF) maintaining responsibility for airstrips most of the district and the Catholic Aviation Service (AMA) maintaining responsibility in the three Star Mountains subdistricts.

3.6.5 CLEAN WATER AND SANITATION

- Work with local communities to establish clean water and sanitation infrastructure.

The Clean Water and Sanitation Sub-program supported the community development program however as it was primarily considered to be an element of the “*Village level health prevention and promotion program*”, it has already been described in section II / 2.4.

4. GENDER AWARENESS PROGRAM

- To enhance the capacity of women in Jayawijaya to participate in community processes, and to identify and address their own health and development needs

One of the major assumptions upon which WATCH’s approach was founded was that extreme gender inequalities exist in Jayawijayan communities and that these inequalities are a root cause of the poor health of women and children. It was therefore considered crucial that the team who designed WATCH create an approach that would address this cause of poor health. Before we look at what WATCH did to address gender inequalities let’s consider what WATCH meant by gender inequalities. Gender inequalities referred to the disparities between men and women’s status in Jayawijaya. These disparities, the project design team and staff believed, were evident by certain local cultural configurations such as patrilineality, patrilocality, bride wealth, clans and selective infanticide. The project team’s understanding of these phenomena was influenced by the opinions of WVII staff who had observed and heard of such happenings over the fifteen years they had been implementing development activities in central and western Jayawijaya. They were also influenced by the findings of a 1987 GOI/UNDP report on Regional Development Planning for Irian Jaya.

In her 1999 report for WATCH, the IEC consultant and anthropologist Dr. Barbara Dix Grimes outlined several alternative explanations of these cultural phenomena that seem biased against women. For instance, she writes that Melanesian bride price is not about buying a wife but rather, it is about creating mutual ties of obligation between two clans through exchange. What appears a one off payment for a bride is in fact the beginning of a long series of exchanges that flow two ways and only

cease after the death of one of the parties. Dr. Grimes also questions the project team's belief that patrilineality (the type of descent system where offspring are considered to be members of their father's clan) is a cause of gender imbalance and poor health in Jayawijaya by pointing out that if this was so, in regions where there are matrilineal descent systems the women would enjoy better health. However there are regions in Jayawijaya that have matrilineal descent systems and these areas share a similar health status to people in patrilineal regions. Moreover, some women in patrilineal societies can be very powerful and enjoy good health. These alternative views do not negate the idea that there are problems which stem from gender inequalities in Jayawijaya. They should just remind us that it is important to realise that we cannot isolate culturally transparent features and assume that if they were changed the problem of women's poor health and status would be improved. Very often what appears obvious to an outsider is a very complex situation which cannot be understood in terms of an outsider's cultural beliefs and values.

The cultural divide between men and women's work in Melanesia has often been interpreted by outsiders as a prime indication of women's low status. The majority of women's work is related to horticulture including tilling garden beds after men have broken up the soil, planting sweet potato cuttings and other crops, weeding and loosening up soil throughout the growing period and finally harvesting the gardens. This work is very strenuous and requires continuous labour inputs. Even the harvesting of gardens is conducted over a period of months with only enough tubers being harvested each day for the evening and morning meal. Women are also the chief swine herders in Jayawijayan communities and they are responsible for carrying produce and water, gathering supplementary foodstuffs and sometimes prawn fishing. Most of the time childcare is considered women's work as is selling vegetables at the market. While it is true that women do undertake many physically demanding activities throughout Jayawijaya and that these activities can threaten their health it does not follow that women are devalued in these cultures or that some kind of 'imbalance' exists in these relations.

To a greater or lesser extent, right across Melanesia communities create a sharp distinction between the work roles of men and women. While some tasks may be undertaken jointly, most tasks are clearly seen as being either men's or women's work. This reflects the tendency to create sexual difference more generally. As Dr. Grimes writes "the construction of gender in Melanesia is not something that just 'is' or exists. Melanesian maleness and femaleness must be actively created and this is done by creating differences and separation between men and women" (1999, p. 19). Men's activities generally revolve around social transactions such as trade, marriage negotiations and making or breaking political alliances. Women on the other hand have roles associated with production. While labour demands on women are heavy, it does not mean men are not working. Nor does it mean that one kind of work is valued more than the other. In every culture notions of what is appropriate behaviour for the sexes is deeply embedded in understandings about the social order and as such, are very difficult to alter unless both sexes want change.

With a more nuanced understanding of Melanesian cultures the project team could have also seen that men are not lazy, doing very little other than wandering around, talking and smoking. Although on a day to day basis women do more domestic labour than men, men are still working in other capacities. Their principle role in horticulture is the strenuous task associated with preparing new gardens and reopening old gardens that have been fallow for a number of years. This involves cutting down trees and shrubs, piling up rubbish and burning it off, breaking up the ground and forming beds, mounds, earth retainers and/or drainage ditches (depending on the particular system being used) as well as the construction of fences around the gardens to keep pigs out. Men are also responsible for most agroforestry activities such as planting, maintaining and harvesting small stands of fruit trees such as the red pandanus, bananas and pawpaw. In areas of a higher altitude men also maintain and harvest large stands of semi-wild mountain pandanus trees. This work involves travelling long distances from the village and it can be quite dangerous. A considerable number of injuries and even fatalities are reported each year as a result of men falling out of pandanus trees. As is the case with constructing gardens, mens' agroforestry work is sporadic which allows them ample time for the pursuit of other matters of importance to Melanesian communities like group politics, warfare, paid labour or education. While it may be true that men have been less busy since the cessation of warfare, they are still busy using other means to try and maintain harmony in the social and spiritual realms. This important work is done by a lot of means, amongst other things, smoking, talking and travelling to discuss matters with other people.

To their credit, it was apparent to the feasibility team after their initial analysis that gender issues in Jayawijaya could not be alleviated by simply creating opportunities for women's involvement in group decision making, income generation, skills training and further education. The cultures in Jayawijaya were not sufficiently developed for this approach and there were many social factors that would prevent women from benefiting from these opportunities. The WATCH planners were generally cautious about introducing new income generating activities considering that any new activities would be taken on by women in addition to their existing workload even though men would be the main beneficiaries of this extra work. Therefore the planners saw it as necessary to apply a dual approach towards gender by both instigating activities that were hoped to help reduce these social constraints as well as leading to an increase in opportunities for women to learn, experience, participate and lead. As well as their formal program there were two other initiatives WATCH took which have been discussed elsewhere are relevant here because they were instrumental in changing attitudes about gender. Firstly, WATCH employed a predominantly female project staff and commencing in the latter stages of WATCH II, employed a female Project Manager. Secondly, in 1995 the project staff invited a midwife, Sister Mamba Katur, to advise on parturition from the WATCH project in P.N.G. As a highland Papuan woman was being treated with respect by all, this visit is believed to have had a considerable impact on the people with whom she had contact. Both of these initiatives sent strong messages regarding the capabilities of women to all levels of the community in Jayawijaya.

4.1/ 4.2 GENDER MODULE & VILLAGE LEVEL GENDER EDUCATION CAMPAIGNS

- To develop an appropriate Gender (WID / GAD) training module for use in gender awareness raising campaigns in Jayawijaya; and
- To increase the awareness of target communities in relation to gender issues and their relationships with health and development issues through fostering gender awareness campaigns.

The production of a gender awareness module to be used in village level gender awareness campaigns was the staffs' key strategy to raise consciousness regarding gender issues. Using these modules WATCH hoped to decrease women's' and increase mens' productive workload, and to increase women's' status in the community and their reproductive role. The original plan for developing this module was for the WID Coordinator to visit twenty villages across Jayawijaya in order for her to familiarise herself with some of the target areas and then to make a preliminary evaluation of the situation in each location. During these visits the WID coordinator was also to select twenty women, preferably women who were already considered to be leaders within their communities, for the role of WID trainer. The first task of the WID trainers would be to travel throughout their communities collecting baseline data for use in the gender awareness module. Once sufficient baseline data was collected the WID coordinator, WID Trainers and WID consultants would develop the gender awareness module. The module would then be distributed to community groups and its use and effectiveness would be further monitored and evaluated by the WID Coordinator. Finally the module's effectiveness would be reviewed by a group of government, mission, NGO and community representatives during the annual District Gender Workshop. While this plan acknowledged that the production of a gender module would be relatively involved, it was not until the project was underway that actual difficulties became fully apparent. This resulted in the original plan of producing the module within three years being overshot by almost an additional three years.

The first problem to emerge related to sampling. As the gender awareness module was to be used at the village level throughout Jayawijaya, it was important that baseline data be collected from a representative sample of social and environmental settings. Given the degree of cultural and environmental diversity which exists within the project's target area and the fact that very little information was available to project staff about the target communities, it was considered inappropriate to pre-select the target areas for the baseline studies. As an alternative the WID coordinator, Ms. Susana Sрни, embarked upon an intensive process of visiting villages across Jayawijaya. During the first year of the project, she participated in almost every field trip undertaken by project staff. Ms. Sрни would often stay in remote villages longer than other project staff. She spent many nights sleeping in native accommodation and through the days would sit about and talk with local women. She established relationships with many local women through her interest in their lives. At times she would walk long distances over the mountains, rather than fly back to Wamena. Not only did Ms Sрни

spend time discussing women's' issues with village women themselves she also spoke to government officials, community leaders, and missionaries.

Ms. Srimi correctly identified that immersing oneself in community life was an extremely valuable approach for understanding the needs and concerns of local people and for gaining acceptance and respect. In using this approach she was able to collect considerable amounts of quality data, develop a network of local contacts and also to set a positive example to government personnel of how culturally sensitive research can be done. She was also a good model for local women by illustrating what women were able to achieve. Her approach was remarkable because it is extremely rare for government or NGO personnel, male or female, to spend any more time than is necessary in remote villages and it is almost unheard of for Indonesians from other islands to sleep in native houses or travel by foot over the mountains. Ms. Srimi's manner and approach for conducting field work was seen as being an unprecedented example of cultural sensitivity and openness on the part of a government worker. Through her actions she gained considerable respect from both her colleagues and throughout the communities with whom she worked.

When it was felt that there was a clearer understanding about the situation in Jayawijaya the WID coordinator selected twenty WID Trainers to commence the task of collecting data for a baseline study in their (20) villages. Training these Trainers provided a glimpse of just how difficult it would be to explain the concept of gender issues to local women. After all just how does a Javanese woman begin to explain the western notion of gender problems to uneducated highland Papuan women? Despite Ms. Srimi's exemplary cultural sensitivity, she was not formally trained as an anthropologist or cross-cultural gender analyst. There were advantages to this insofar as it allowed her to have an open mind but it also meant that useful approaches and methods were unknown to her at the outset of the project. Therefore, not only did she have to spend considerable time orientating herself in her role as WID Coordinator, but many of the early WID activities such as the WID baseline survey did not utilise the most effective research methods. As a result the baseline surveys were less than ideal and had taken much longer than was originally envisaged.

By the end of 1992 the WID Coordinator began work on designing the gender awareness module. It was originally planned that consultants or a consultant would be employed to assist with this task but it proved difficult to identify an appropriate person/s for this consultancy. As the Project Manager and Director continued to look for a suitable consultant the WID coordinator worked with the WID trainers as well as with representatives from other NGOs, women's groups and health centres. By July 1993 when a suitable WID consultant could still not be found it was decided that the plan to employ a consultant should be abandoned in favour of allowing the WID Coordinator to complete the module herself. After identifying the gender-related problems Ms. Srimi encountered a number of problems during the design and preparation of the module. She wondered just how does one create and effectively convey messages to locals in order for them to understand? It is O.K. to simply 'inject'

these messages into people or is a strategy that allows for heightened reflexivity more apt? And what audience is the module to be written for - women, men, both women and men, young people, old people? What language and level of detail should be used?

In order to resolve some of these issues and compare her methodology and findings with the work being conducted by other organisations, in early 1993 the WID Coordinator undertook a study tour to West and Central Java. During this trip she visited a wide range of universities, foundations, government departments and NGOs in Jakarta, Solo, Yogyakarta and Salatiga. This study tour helped stimulate and organise her thoughts into gender modules. While some could argue that this study tour should have been conducted earlier in the project it is also arguable that the trip was timely. Ms Sрни was able to gain experience and formulate her own specific ideas and questions before being exposed to the trends in WID/GAD theory.

One of the outcomes of Susana's visit to Java was a decision to employ a consciousness-raising participatory approach based on Paulo Friere's adult education methods. This type of approach required that the module contain pictures of situations likely to arise in the daily lives of Jayawijayans to prime group discussions. On her return from Java Ms. Sрни continued to work on the preparation of the gender awareness module. In particular she worked on the task of organising her data according to list, themes and codes and analysing it so as to determine the most important areas for interventions. The proposed module was to include six topics including: community profile, work profile, incomes, health and nutrition, children and education and social organisation. Problems were encountered with finding a suitable illustrator for drawing the pictures for the module. The first choice was Dr. Adrian Gunawan who was working as the head of the Tiom puskesmas, but he became unavailable. The second choice, Eliza Umbora (a graphic artist with the Bethesda Health Foundation in Jayapura) was contracted to produce the required illustrations however within 24-hours of arriving in Wamena to carry out this work Mr. Umbora became terminally ill. Whilst Mr. Umbora was able to complete the section of the gender module covering organic agriculture / LEISA, the WID coordinator was forced to search for another illustrator to complete the *MAWAS DIRI* (Gender awareness) component of the "Gender Module. Ultimately the illustrating work was completed by the first choice, Dr. Adrian Gunawan, with assistance from another artist Mr Edwin Zakaria.

A draft version of the gender awareness module was completed in mid-1993. It was launched at the District Gender Awareness Workshop held in Wamena in August 1993. In this workshop the participants generally accepted the draft module but there were a few useful criticisms made. The academic George Aditjondro pointed out that the module was still essentially an outsider's view of indigenous gender problems. He stressed that there needed to be a further and improved collection of baseline data including more tribal-specific data. It was also suggested that one overall model for gender awareness is not adequate for it does not address the specific circumstances in each community. These criticisms were perceptive as different regions can have a remarkably different level of labour

segregation. For instance amongst the Ok tribal groups the division of labour appears more egalitarian reflecting their greater reliance upon hunting and gathering. The other issue that was raised was that the module needed to offer more solutions and not to just highlight problems. For instance if the module suggested that local agriculture systems were part of the problem then WATCH needed to incorporate some material regarding a better agricultural system into the module.

Immediately after the District Gender Awareness Workshop, the module was implemented in twenty villages. The WID Coordinator monitored these activities and also collected further data for inclusion in an upgraded module. In response to the criticisms, earlier in WATCH II the draft gender module was upgraded to include baseline data and also to incorporate material on LEISA. There were many interesting experiences for the GAD Coordinator and the GAD program in general in the first year of WATCH II. Firstly, the GAD Coordinator was exposed to other ideas and methods during a visit to the AusAID's gender project in Merauke. Ms. Srini was also able to further revise the draft after another trip to Java where the sociologists at Satya Wacana University encouraged her to consider new approaches to adult learning. Also, around this time Ms. Srini worked with Dra Naniek and Leslie Butt (see section 2.1.1) which gave her more knowledge about anthropology and participatory methods. There was also a visit by a GAD consultant, Ms. Helen Lok. Amongst other things, Ms. Lok confirmed the use of an approach, which would encourage local people to think reflexively. She recommended the technique of Participatory Rural Appraisal (PRA) as it offered suitable methods for workshops in Jayawijaya. PRA advocates the use of drawings, photographs, lists, charts etc. to help others arrive at solutions through finding links and listing priorities and as such it relies on active participation and two-way communication. Along with Susana and the trainers, Ms. Lok helped design another draft of the modules. This draft was completed and submitted to the August 1994 District Gender Awareness Workshop and further input for revisions received at this time

Although there were preliminary training sessions up until 1996, the gender modules were not fully useable until September of that year. Three modules were created for the community: one for the use of GAD Trainers to teach field officers and cadres, another for the GAD to teach the community and the third for field officers and cadres to use in the villages. A fourth gender awareness module was created at the request of the *Bupati*, who established a group to oversee that the PKK and all district and subdistrict officials received instruction in gender awareness. Again we can see how the WATCH project effected attitude change amongst government workers. Although the gender awareness module was considered to be essentially complete by the end of WATCH II, throughout the interim extension and WATCH III the GAD Coordinator continued to identify weaknesses in the module and improved methods for conveying messages and promoting gender reflexivity. This continual openness to improving the modules was testament to the GAD Coordinator's flexibility and open mind.

During WATCH III, when the project's target area was reduced, it was proposed that the gender awareness module be again upgraded to make the module more comprehensive and locally specific.

The illustrations were to be redone to more closely resemble the people and situations in Kanggime and Kembu-Mamit and additional pictures and topics were to be incorporated. These were to cover specific issues related to gender imbalance and women's health that had not been covered in the earlier edition such as venereal disease, pre-marital pregnancy and prostitution. A simpler guide book was also to be prepared for instructing people in how to use the gender module for education campaigns. In addition, the module was to be translated into the local Lani language and it was to be printed in the style of a flip-chart book, a medium that had proven quite popular for use in group education and discussion sessions. Although communities had requested that this be done from as early as the first release of the draft module at the Gender Awareness Workshop in August 1993 it was not logistically feasible to produce such locality specific modules until WATCH III. The focused approach in this stage allowed the project to test whether materials specifically designed and translated for individual ethnic groups would have much greater impact than more generic materials, which used the Indonesian language.

The upgrade was meant to be completed by September 1999 however, delays in finding an appropriate consultant to assist with this work meant that it was not done until November and December. In November 1999 the consultant, Dr. Barbara Grimes, was employed to help with further upgrading both the health IEC materials and the gender awareness module. She commended the staff for their attempts to establish health education strategies appropriate to the context of the Jayawijaya highlands but suggested that WATCH's IEC materials and gender module were still reliant on the injection method rather than analysing and formulating health messages from the perspective of the learner. She also stressed the notion that Melanesian ideas of sexual difference entailed that it was unreasonable for staff to expect men and women to equally participate in activities which are traditionally gendered. Ms. Grimes' input proved both controversial and invaluable as it encouraged project staff to continue questioning their approaches.

During WATCH III the gender awareness modules were provided to prominent people in the community including health workers, teachers, church leaders, women's leaders and other community leaders. In 1997 the Catholic Church adopted WATCH's gender awareness module for use in their Junior and Senior Secondary schools and the Wamena SPK adopted it as part of their program for training nursing aides.

4.3 / 4.4 WID / GAD GROUPS & WOMEN'S INCOME GENERATING ACTIVITIES

To establish effective women's groups for the purpose of conducting education and community development activities.

To establish women's income generating activities in selected villages.

The feasibility team reasoned that since communities in Jayawijaya were highly segregated, mixed-gender groups and training activities would not work effectively, as they would be culturally inappropriate. During WATCH I, WID and Community Development activities were strictly

segregated: there were only women in WID groups and men in CD or agricultural groups. As it was culturally unacceptable to maintain a segregated approach, this arrangement proved unsatisfactory. During the transition from WATCH I to WATCH II the project's WID policies were formally changed to GAD policies. This change was at once a general reflection of changes that were occurring in development theory and practice and a solution to the problems experienced by the staff during WATCH I. Yet in the field it proved not to be feasible to separate the community in this way and the staff soon learned that they needed to work with the entire community in order to address gender issues. In line with GAD principles, and not WID principles, sessions were made gender inclusive and this arrangement heightened awareness about gender issues as it allowed for dialogue between the sexes. By talking together, both sexes were able to discuss how they could work together to create more equitable relationships. Contrary to staff assumptions, women were not silent in these workshops, they too contributed to the discussions.

At the time that men and women's groups merged, so too the WID and CD activities were melded. This was a complementary arrangement. As the GAD consultant Helen Lok wrote "the two programs are mutually supportive the community development activities are the practical solution to the community imbalance and the gender awareness program has been developed to lend strategic support to this". Therefore, the main discussion about WID groups and women's income generating activities in this document is combined with the discussion of CD groups in section 3.1 of this document.

4.5 WOMEN'S EDUCATION

To provide opportunities for women to gain further education and to provide long term role models to improve the status of women.

There are considerable social, geographic and economic barriers preventing indigenous Jayawijayans, both male and female, from attending school. Yet there are a number of specific social concerns which make it particularly difficult for older girls and women to pursue education. Firstly there is considerable pressure on most girls to marry around the time of the onset of menarche and to begin the work of child rearing and horticulture. There is a concern that if girls are allowed to attend school beyond the onset of puberty than they could become pregnant and marry against traditional prescriptions. There is also a common concern that if women are exposed to a formal education they will become full of foreign and inappropriate ideas. This is a problem for the community as "clever women" can be, it is thought, disruptive to the status quo for if they have greater aspirations women are not content to simply raise children and tend to their gardens. It is also believed that if educated a woman is more likely to commit adultery and to use birth control without their husbands' consent.

Although not specifically part of the plan to educate local women at a higher level the WATCH project helped women broaden their worldview by participating in inter-village study tours and training

activities conducted in Wamena. It was felt that such opportunities for women to travel outside of their own villages and, most importantly, to share and compare their experiences with women from other parts of the district, were an invaluable means for encouraging reflexivity and cultural self awareness of gender issues. For the same reasons the staff were careful to actively select women participants in the study tours to Java. In WATCH III the project aimed to recruit 50% women in the two trips to PPLH in Mojokoerto but this ideal was not reached as it was not easy to find women who were suitably educated and willing and able to travel to travel to Java.

4.5.1 HIGH SCHOOL SCHOLARSHIPS

- Liase with the WVII sponsorship programs for females wishing to be educated.

During the planning of WATCH I the idea was put forward to establish a scholarship fund to pay the expenses for a total of 60 girls to attend high school. However, due to the problems relating to the sustainability of such a scholarship fund, especially in the context of a short term project, this option was not pursued beyond the planning phase. Instead, WATCH I aimed to link in with a women's scholarship fund which WVII was in the process of establishing at the time.

Unfortunately, there were problems with this as most of the time WATCH's target area did not overlap with those of WVII. As residence within a WVII target area was a prerequisite for participation in their scholarship program, most of the women who WATCH could nominate as being capable of and willing to participate in the program were ineligible as they did not live in WVII targeted areas.

4.5.2 HIGHER EDUCATION

- Seek avenues to support the higher education of local women

In 1993, six midwives got funding to study in Jayapura but unfortunately the decision to grant them a scholarship came too late as the students had already finished their course and in April 1994 it was recommended that 2-4 scholarships be found for locals to do academy or undergraduate training in CD, nutrition or nursing.

4.6 DISTRICT LEVEL GENDER AWARENESS

- To increase gender awareness at the district level.

4.6.1 GENDER AWARENESS WORKSHOPS

- Conduct an annual "Gender Workshop" at the district level

First gender awareness workshop was held in 1992 and was attended by participants from the District Council of Women's Organisations (Gabungan Organisasi Wanita – GOW). Speakers at this

workshop included a number of prominent Papuan women's leaders and discussions sessions attempted to analyse the situation experienced by women in Irian Jaya and Jayawijaya.

In August 1993 the second Gender Awareness Workshop was held. It was attended by doctors, NGO and Government health workers, and representatives of the GOW and other women's groups in Jayawijaya, local NGOs and AusAID. This workshop was used as the platform for the launch of the draft gender module and the first stage of training for the first twenty WID facilitators.

The third gender awareness workshop was conducted in 1996 with the theme "gender and the socialisation of healthy living". This workshop was conducted in collaboration with the PKK-DMT and was attended by the members of the PKK Sub-district Motivating Teams (PKK-SDMTs).²³

In January 1999 a fourth gender awareness workshop was conducted. This workshop took the form of a less formal discussion of gender issues between representatives from local NGOs, church leaders, teachers, doctors, and others individuals with an interest in gender issues. The discussions focused on the idea of the establishment of an indigenous foundation for the empowerment of Jayawijayan women.

In April 1999 a fifth gender awareness workshop was conducted in Wamena. This workshop was more formal than the fourth workshop and had a broad range of participants including representatives of a number of local government departments, BPPT, LIPI and various local and international NGOs. Speakers included Mrs. Mientje Rumbiak (UNCEN), Savitri (LIPI) and the WATCH GAD Coordinator Susana Sринi. The main aim of this workshop was follow up the outcomes of the fourth gender awareness workshop and prioritise problems which should be addressed and formulate strategies for women's empowerment programs and a dedicated women's empowerment foundation in Jayawijaya.

The fourth and fifth workshops resulted in the subsequent establishment of the Yayasan Humi Inane or Women's Voice Foundation by a number of women who participated in the workshop as described in the following section.

4.6.2 Women's Empowerment Institution - Facilitate the foundation of a women's empowerment institution for Jayawijaya

During WATCH III, project staff worked closely with the *Yayasan Humi Inane* or Women's Voice Foundation with the aim of developing its capacity to represent and advocate for the rights and needs of indigenous women in Jayawijaya. This foundation was conceived of in 1999 during a district

²³ As the establishment of PKK-SDMTs had only really been successful in the sub-districts close to Wamena, such as Wamena, Assologaima, Kimbim and Kurulu, attendance of this workshop was actually quite limited.

level gender workshop, which WATCH facilitated. The idea was taken up by a group of Papuan women who had already been active in the area of women's rights in Jayawijaya. They approached WATCH and expressed their interest in working together to establish an umbrella organisation for non-government women's groups in Jayawijaya. Since then they have been working closely with WATCH in order to establish this foundation. WATCH personnel have helped *Yayasan Humi Inane* to implement a range of capacity building initiatives and activities including; assisting them to clarify the Foundation's vision and mission statements, helping them develop a network of contacts within the government, NGO and Donor communities, training them in basic administrative, accounting and management skills for running an NGO, recommending them to other organisations wishing to work together with Yayasan Humi Inane, assisting them with the preparation of plans and proposals, and keeping them informed about women's health issues, training opportunities, workshops, etc. This foundation was recently given legal recognition by the GOI and the Foundation's constitution was officially registered with the appropriate government departments. *Yayasan Humi Inane* also became a member of the "Network of Women's Health in Eastern Indonesia" (Jaringan Kesehatan Perempuan Indonesia Timur - JK PIT), a regional network covering West Nusa Tenggara (NTB), East Nusa Tenggara (NTT), Maluku and Irian Jaya Provinces, as well as a major national NGO forum the "Centre for Communication of Gender Oriented Health" (Pusat Komunikasi Kesehatan Berperspektif Jender - Puskom Jender). Furthermore, the foundation has already been approached by representatives of the National Planning Body (BAPPENAS) and the UNDP Community Empowerment Program (*Program Pemulihan Keberdayaan Masyarakat*) with a request that *Yayasan Humi Inane* work together with BAPPENAS and UNDP in administering and implementing part of the PKM Program. The women so far involved in *Yayasan Humi Inane* have all displayed a very strong commitment to the furtherance of Papuan women's empowerment.

4.6.3 GENDER ANALYSIS TRAINING

Throughout the course of the WATCH Project the GAD Coordinator also assisted as a facilitator in the annual gender analysis training workshops which were conducted by the Community Development Section (Pengembangan Masyarakat Desa - PMD) of the District Administration. Participants in this training included selected government officers and a number of invited NGOs. These gender analysis workshops were instigated by the Bupati in 1995, in response to the work of WATCH, but ceased in 1998 due to problems with responsibility for the implementation of these training sessions being transferred from the PMD section to the Social Section of the Bupati's Office.

In 1999, the GAD Coordinator was also requested to act as the facilitator for a workshop / group discussion regarding gender and health in Irian Jaya, which was conducted by UNCEN and the Provincial Health Office. Participants in this discussion included undergraduate students studying medical anthropology from within UNCEN's faculty of Anthropology in Jayapura.

Later in the same year the GAD Coordinator was also presented the results of WATCH's work on gender and health in Jayawijaya at a seminar conducted by JKPIIT (Network of Women's Health in Eastern Indonesia).

5. SPECIAL TRAINING AND EXPOSURE PROGRAM

- To support other programs through a variety of training and exposure activities for Project and DHO staff and community representatives.

5.1 PROVIDE THE OPPORTUNITY FOR VISITS, MEETINGS AND EXCHANGES

Project staff and community members were encouraged to learn about the latest ideas in health development as well as to make links with other agencies and individuals through inter-village visits, the inter-island visitation program and attending seminars and workshops.

5.1.1 INTER-VILLAGE VISITS

- Conduct and supervise an inter-village visitation program.

Commencing in WATCH II a program of inter-village visits was incorporated into the project's strategy. Visiting other villages was considered stimulating for local people who have rarely encountered other ways of life. Many local adults have never even travelled more than a few kilometres from their own villages and consequently have a very limited capacity to comprehend ideas from outside of their own context. Accepting new ideas had presented itself as a considerable obstacle in WATCH I.

The first inter-village visit was conducted in November 1994. Eleven of the WATCH field officers participated in this trip and spent one week living, working and learning in the Pitt River (Pirime) and Tiom areas. These areas were selected as the most appropriate site for an inter-village visit because a broad range of agricultural and animal husbandry activities had already been established in the area, mostly by APCM (Yapelbap), BPPT and the Department of Agriculture but also to a lesser extent by the project's interventions. In particular this inter-village exchange allowed the field officers to see first hand such innovations as healthy houses, terracing, successful rabbit raising activities, bee keeping, aquaculture, mixed farming and coffee production. This trip also gave field officers the opportunity to talk to local people and learn from their experience regarding the usefulness and appropriateness of such innovations in a Jayawijayan setting. As this trip was considered a success, in mid-1995 a second group of cadres also visited the Pirime and Tiom areas.

Beginning in the 1995-1996 project year the sites for inter-village visits altered from the relatively advanced Pirime and Tiom areas to other areas where WATCH's CD groups had made significant progress. The idea for this decision was that by showing CD groups what had been

achieved by other groups within the project it would show them what they were capable of and it may even foster a greater degree of competitiveness between groups. This idea came to be preferred over exposing people to activities that had been established over a much longer period of time and with focused and sustained assistance from missions NGOs and government bodies. It was reasoned that providing a more plausible model for the CD groups would lead them to accelerate their progress.

During the 1995-1996 project year four inter-village visits were conducted. The first visit was made by six cadres from the Koropun area who went to three locations in the Grand Valley. These included Manda in the Upper Grand Valley area, where a group had established an excellent mixed farming system incorporating rabbits, goats and aquaculture activities; Kimbim, in the Mid Grand Valley, where groups had also successfully established rabbit raising, aquaculture and a traditional medicines garden; and around Wamena. The second trip saw nearly all of the field officers and GAD facilitators visiting the rabbit raising, aquaculture and a traditional medicines garden activities of the group in Kimbim.

In early 1996 a group of field officers visited a group at Hepuba in the Lower Grand Valley area. This group had established an alley cropping garden system, which incorporated both traditional and recently introduced vegetable crops inter-planted with a wide variety of fruit and nut trees as well as nitrogen fixing Acacia trees. In mid 1996 another group visited Obiya and Jiwika / Kurulu in the Mid Grand Valley to observe various group activities including aquaculture, rabbit raising, bee keeping, mixed vegetable gardens and fruit orchards and food processing initiatives undertaken by local groups. There were a further four visits made by various people to the above locations.

During the interim extension phase the inter-village visits were discontinued. This decision was principally made in light of the reality that the drought conditions being experienced in many areas of Jayawijaya made it difficult to convince people to leave their villages. Also it would have been inappropriate to bring groups of outsiders into communities which might already be experiencing abnormally high levels of social stress.

It was hoped that in WATCH III the inter-village visitation program would be continued albeit in a different capacity. The program could not continue as before since that there was a smaller target area and the increased number of field-based staff meant that more in-situ training was generally used. There was a plan for several cadres to attend appropriate technology training with trainers from the Centre for Applied and Sustainable Energy (CASE) in Makki in September 1999. Unfortunately this activity never eventuated, as the CASE trainers were not able to travel to Irian Jaya as had been planned.

5.1.2 INTER-ISLAND CADRE EXPOSURE AND TRAINING PROGRAM

- Conduct an inter-island visitation and training program for cadres and other community members.

This sub-program was motivated by similar concerns to the inter-village visit program. And like the latter program, it was introduced into the project at the beginning of WATCH II and during the interim extension phase there were no activities under this sub-program. At the beginning of the second phase of WATCH II there were plans to arrange for small groups of field officers or community cadres to travel to other parts of Indonesia. Here they would be instructed in and exposed to certain new ideas and technologies that WATCH was attempting to promote. For instance in the 1994-1995 annual plan it was proposed that one or two cadres or field officers would go to Yogyakarta in central Java to be trained in tanning rabbit skins. It was also planned that a further one or two cadres would go to the Balai Penelitian Ternak Ciawi (Ciawi Livestock Research Centre) in Bogor (West Java) for training in rabbit, chicken and duck raising. However these plans were thwarted as WATCH could find nobody with an adequate background in basic chemistry and biology to take part in this trip.

As an alternative, in December 1994 four cadres from the villages of Wouma, Manda, Kanggime and Iwur travelled for one month to the Balai Penelitian Ternak (Livestock Research Centre) in Bogor for training in rabbit, chicken and duck raising. This group also spent time in Sukabumi, also near Bogor, learning about mixed farming concepts under the guidance of Dr. Fred Rumawas of the Bogor Agricultural Institute. After returning from the trip all four of these cadres were appointed field officers in their respective areas. This trip generated considerable interest and enthusiasm by the *Bupati*. At one point he offered to fund one person to spend as long as four months undertaking vocational training and exposure in Java. Whilst the *Bupati's* offer was generous, his plan was logistically hard to arrange. Instead the extra funding was used to assist WATCH with financing another proposed trip for 17 cadres.

In this second trip, the cadres travelled to Bogor from the 9th of July 1996 to the 8th of August to be trained in a range of agricultural (especially in LEISA/Organic Agriculture), animal husbandry and income generation activities. The GAD Assistant (Martha Kombong) and the Project Secretary (Lusiana Ong) escorted and supervised this group. For this trip WATCH also held a pre-departure briefing and prepared a comprehensive handbook for participants. After the trip there was also a de-briefing in Wamena and each participant was required to prepare a report on his or her impressions of the trip. From these reports another report was made by the GAD Coordinator and GAD Assistant.

In WATCH III the inter-island exposure sub-program was made a higher priority. Experience gained from implementing this sub-program in WATCH II allowed the project to be considerably more focused in WATCH III. In this phase all training and exposure trips were planned to take place in the second and final year so as to allow maximum time for the selection of appropriate participants.

Moreover, from the outset it was proposed that the trips should be made by larger groups and the trips should be shortened to two or three weeks training plus another week for travelling.

In WATCH III there were two kinds of inter-island training and exposure trips. The first kind aimed to send ten representatives from locally run NGOs to Solo in central Java to undertake training in NGO management. The second kind of trip aimed to send two large groups of 20 cadres to Java to be trained in agriculture at the Pusat Pendidikan Lingkungan Hidup (PPLH). It was a good idea to send cadres to the PPLH as it is an internationally known institution that specialises in organic and LEISA agricultural training. The teachers at the PPLH also use a PRA/PLA approach for teaching and for group problem solving. A four or five day pre-departure briefing precluded these trips and there was a debriefing afterwards. Participants were expected to submit a report about what they learnt and felt during the trips and these reports helped WATCH evaluate the activity's effectiveness.

In October 1999 the first four representatives from indigenous NGOs in Jayawijaya were sent to Solo in Central Java to be trained by Yayasan Indonesia Sejathera (YIS) in NGO management and financial administration.

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|----|--------------------|--------------------------------|
| 1. | Mr. Yason Kenelak | Yayasan HANA DANA, Manda |
| 2. | Mr. Kayo Huby | Yayasan MULA, Wamena |
| 3. | Mr. Cornelis Oagay | Yayasan SUPULA, Wamena |
| 4. | Mr. Mathius Kobak | Yayasan YASUMAT, Yahukimo area |

A second trip was run in May 2000. Participants in this trip included:

- | | | |
|----|---------------------------|-------------------------------|
| 1. | Mrs. Salomina Yaboisembut | Yayasan HUMI INANE, Wamena |
| 2. | Mrs. Desilon Wakur | Yayasan YUMA, Mamit |
| 3. | Mrs. Mama Tigi | Kelompok Ibu-Ibu, Kanggime |
| 4. | Mr. Manase Wanimbo | Yayasan OBOR SUKACITA, Kutime |
| 5. | Mr. Pinus Wakur | Yayasan YUMA, Mamit |
| 6. | Mr. Lukas Pahabol | Yayasan YASUMAT, Yahukimo |

Therefore WATCH was able to meet its target of ten participants on these trips and also ensured that a broad range of representatives from nine different indigenous NGOs including three women (30%) were involved.

In organising community participation in the exposure and LEISA training trips to the PPLH, WATCH Staff were not quite as successful in reaching their targets of 20 cadres per trip. In September 1999 18 cadres (12 males and 6 females) went on the first exposure trip to PPLH in Mojokoerto (East Java). The training was for one month and it took about nine days traveling each way. The group was

escorted and supervised by GAD Assistant (Viktor Malissa) and Training Officer (Martha Kombong). The second trip to PPLH to learn about agriculture was conducted in April 2000 with 18 cadres (15 males and 3 females) from Jayawijaya participating. After a four-day pre-departure briefing and induction period a total of 21 participants²⁴ departed on the 24th of March 2000 with the WATCH Nutritionist Nini Deritana and the field officer Agustinus Tekege. The group returned to Wamena around the end of April.

WATCH faced considerable problems at the beginning of this second trip to the PPLH as many cadres from both Kanggime and Kembu-Mamit subdistrict refused to take part in the trip. This significant incident requires a relatively lengthy explanation and investigation. When the Health Coordinator and Training Officer met with cadres in Kanggime it transpired that of the 11 cadres who had been selected to participate in the trip 7 were no longer willing to participate. The reasons presented for wishing to withdraw from the trip ranged from appealing to personal illness, travel sickness, illness of offspring and that the training was considered to not be very useful as the project was about to end.

After the field based staff had enquired more into the underlying reasons for why so many cadres wanted to drop out of the exposure and training trip at such a late stage, several issues emerged. Certain individuals within the community expressed the opinion that there was not really much point or benefit in going to Java when the project was about to finish anyway while others appeared to have been jealous or annoyed that their wives were not selected to take part in the trip. The latter had subsequently tried to discourage other cadres from participating. Some cadres had hoped that the exposure trip would be cancelled so the funding for this activity could be redirected into capital to fund community development group or POD activities. There was a general desire amongst the community that it would be more useful for WATCH to build a training centre like PPLH in Kanggime so that a larger proportion of the community could have access to this kind of training. A number of cadres who had participated in the first exposure and training trip seem to have been under the impression that after the trip they would receive some funding from the project to use as starting capital for group activities. When they did not receive any money some of these cadres tried to discourage other cadres from participating in the second trip. The proposed participants expressed their feeling that exposure and training trips should be to destinations within Irian Jaya rather than to Java. This desire seems to have arisen only in the few months leading up to the trips as previously cadres were very enthusiastic about travelling to Java for such exposure and training trips. It is therefore suspected that cadres now feared to leave their province for a range of possible reasons related to recent political developments and the current climate of uncertainty in Irian Jaya.

²⁴ The three empty places which could not be filled by participants from Kembu / Mamit at such short notice were filled by 3 cadres from the World Vision Area Development Project at Pantai Kasuari on the south-east (Asmat) coast of Irian Jaya.

Based on these reports the project staff held a meeting to seek strategies to overcome this problem. In this meeting it was decided that other participants should be offered the places of those cadres who refused to travel to Java. These alternative participants could either be members of the same community development groups as those people who had rejected the trip or else they could be from different groups. It was subsequently found that there were many other people from throughout the community who were very keen to take part in the exposure trip.

Unfortunately, this problem was not entirely resolved by selecting new participants to replace those who had refused to take part. The cadres who had originally refused to take part in the trip were angry when their places were taken by others as they wished to see the funding for this activity distributed directly to the originally proposed participants as group starting capital. Some of these cadres went so far as to block the runway when the plane was due to fly in to collect the trip participants. As a result eight of the male participants had no choice but to walk for two days to reach Wamena if they wanted to go on the trip and only two female cadres were able to travel to Wamena by plane. WATCH decided to continue implementing this activity on the basis that there were still many people in the community who wish to take part in activities of this nature. The fact that eight cadres from Kanggime would walk for two days and face the anger of those cadres whom they had replaced in order to participate in this exposure and training trip is evidence of the strong interest some still had in activities of this nature. Moreover, not long after a few cadres regretted their actions and requested to be included if there were future inter-island trips. In the pre-departure briefing project staff made clear agreements with the cadres departing to Java about the rights and obligations of all parties in order to avoid further cases of cadres making unreasonable demands upon the project.

WATCH personnel received information that seven of the eleven cadres from the Kembu / Mamit subdistrict had also refused to travel to East Java to take part in the exposure and training trip. However, four other cadres were found who were willing to take up some of these places. Of the eight cadres who ultimately joined the trip, five travelled to Wamena by light aircraft and three walked. Once they arrived in Wamena the cadres from Kembu / Mamit informed WATCH personnel that problems which had arisen in Kembu / Mamit were due to similar reasons as the problems experienced in Kanggime. However, in Kembu / Mamit problems were identified and overcome more easily as Mr. Timotius Wakur, a local church leader and member of the District Parliament became personally involved in resolving the conflict. Mr. Wakur continues to support the exposure and training trip program on the grounds that it is rare that people from Irian Jaya have the opportunity to take greater control in the processes of development and social change.

The experiences described above indicate that there has been a considerable change in the social climate in the targeted areas of WATCH III. Only six months ago when promoting the first cadre exposure and training trip to Java WATCH found that most cadres were enthusiastic about this opportunity and those who could not participate in the first trip expressed a clear desire to join the

second trip. Now many of the cadres selected have refused to take part and have attempted to pressure WATCH to give them cash payments instead. However this needs to be kept in perspective as there were still many cadres who did wish to participate. It seems apparent that the cadres' resistance does not represent the opinions or attitudes of the entire community towards the exposure and training trip activities. It is believed that only a few individuals were directly involved and that they were probably motivated by reasons that are not entirely clear. It does seem likely that the high drop out rate and other problems with the second exposure and training trip have been related to growing political uncertainty in Irian Jaya. In particular cadres may have been fearful that they would not have been able to go home if something was to happen on the 1st of May, the date set by independence activists for some form of demonstration. It also seems to be the case that community perceptions of the project have shifted from embracing the concepts of self-reliance and sustainability towards viewing the project as a source of immediate material gratification. This is a key issue for WATCH, which has been discussed in greater detail in section II / 4.1.7 of this report.

Comments about inter-island and inter-village visits:

Earlier on it was felt that a major advantage of inter-island tours was that they provided opportunities for cadres to receive specialist training. However it proved difficult to attract people who were willing and able to take up the opportunity for such specialised training. Perhaps it was more appropriate to view the trips as principally being about exposure with the training being a bonus rather than the main aim.

Shorter trips of around two weeks or less were found to be optimal as it appeared that after a couple of weeks cadres came to be over saturated with new ideas and experiences and found it hard to take in any more information.

Travel problems involved in inter-island visits to Java were considerable. In most cases cadres had to fly on the army's Hercules from Wamena to Jayapura and then by ship for one week from Jayapura to Surabaya. Once they arrived in Surabaya it usually took around 3 hours to travel by bus or train to the final destination (in Mojokerto). This meant that cadres would often spend over two weeks travelling a consequently have only a relatively short stay in Java (3-4 weeks). Whilst this is a problem it was deemed inappropriate to fly them by commercial jet from Jayapura to Jakarta as this would give them a quite distorted impression of how other Indonesians live. After all most Indonesians travel around by boat and not by jet.

Although both programs were successful, the inter-village visits were more directly applicable to the cadres' lifestyles and as a result, were probably more influential. To see fellow highlanders succeeding in new initiatives would have been inspiring for the visiting cadres' experiences of trying to adapt to new skills and experiences. In contrast, what the cadres saw in Java would have been more alien to the cadres' worldview and as such it is likely that ideas from visiting Java were less able to be

assimilated into the cadres' minds. This is not to say that exposure trips to Java were not worthwhile for their trip reports indicate that a lot was learned. It is to say that in future it might be more effective to take people to locations outside of Java where the people are more advanced and yet their ways of life are not too foreign to someone from Jayawijaya. For instance a visit to the Toraja Highlands in Sulawesi would, it can be assumed be more easily assimilated into a Jayawijayan's worldview.

WATCH's choice of organising larger groups to undertake inter-island and inter-village trips had a number of advantages that are thrown into relief by considering the disadvantages of using a small group approach. For one, people from isolated Papuan communities, many of whom are daunted by the prospect of leaving their homes, may feel vulnerable if were to travel in smaller groups. The small group approach may be especially insensitive if projects aspire to include women on such trips. It is plausible that with more 'chaperones' women would be more likely to travel far from their village. Furthermore, working in smaller groups is logistically inefficient, as it requires more resources to adequately plan and supervise a range of small activities than it does one large activity. Whilst logistical efficiency should not be the principal motivator in the planning of development activities, in situations where it links with effectiveness as seems to be the case here, it can be prioritised.

WATCH regretted that more women did not participate in these trips. This outcome is not surprising given that most Jayawijayan women are subject to suspicion if they venture away from their villages as it is speculated whether they have been committing adultery or have been harassed by other men. Moreover, it is likely that women themselves feel anxious by the prospect of travelling and also because they feel they are needed at home to feed everyone and look after children and pigs. WATCH too created an obstacle for women's participation in these trips by establishing requirements that participants should be formally educated to at least Junior High School level and be fluent in Bahasa Indonesia. WATCH did recognise these requirements were set too high for many women and consequently relaxed these requirements to a certain extent. However, it was ultimately felt that there was little point in sending people whose paucity of education and language skills might considerably limit the benefit which they could derive from the experience. Furthermore, there is a limit to which positive discrimination policies can be applied in a context such as this without upsetting other (male) community members who are being discriminated against.

Aside from allowing large groups to travel, there are two ways to make these trips more possible for women. The first way is to reduce the minimum education requirements for women's participation and the second is to encourage married couples to take part in the program. These strategies could be combined so that the minimum education standards could be relaxed so long as one member of the couple can meet the standard. The desire to involve both husbands and wives was raised as an issue in the confrontation about the second trip in WATCH III. Those who raised this issue had a valuable point because to include their wives would not only raise the level of women's involvement in the program, it would allow the couple to discuss the shared experience and new ideas.

If only men are sent they might make decisions to introduce new techniques or technologies which their wives who are the main producers for the family may not accept. However, the idea of sending couples on these trips is also complicated by a number of factors. For example, it may cause jealous amongst other cadres to see two places in the exposure and training trip allocated to one couple and also because if both husband and wife were absent from their home for a period of 50 days this could cause considerable problems with the maintenance of gardens and the care of dependents. A possible alternative is to attempt to send couples on separate trips. This would admittedly have a somewhat different effect than if the couple was able to undertake the training together but it might still be a tenable strategy for raising women's involvement and reinforcing the impact of the training at the level of the household.

5.1.3 INTER-ISLAND STAFF VISITATION PROGRAM

- Conduct an inter-district and inter-island visitation and training program for the professional development of WATCH and DHO staff

This sub-program was formally introduced at the beginning of WATCH II however it has roots in a number of activities from WATCH I. These earlier activities highlighted the usefulness of sending project and government health staff to other provinces to build networks and gain new insights, skills and knowledge that were relevant to the project's goals. Some of these activities were undertaken as a part of AusAID's inter-project visitation program while others were undertaken in response to perceived needs within the health, GAD/CD and monitoring and evaluation program. Others still were undertaken in response to opportunities that arose during the course of the project. Another element of this inter-island program involved sending SPK staff on three trips (see section 1.1.2).

The first study tour for staff occurred in early 1993 by the WID Coordinator. As discussed in section 4.1, Ms. Sринi went to West and Central Java and visited a wide range of universities, foundations, government departments and NGOs in Jakarta, Solo, Yogyakarta and Salatiga in order to stimulate and organise her thoughts into gender modules. During December 1994 the GAD Assistant (Martha Alua) spent one month training at the Pusbangtepa IPB (Centre for Development of Food Technology, at the Bogor Agricultural Institute). Through this training she learnt about many new product lines which could be developed in Jayawijaya for nutrition supplementation and income generation. As this trip was so fruitful it was proposed that another trip to the Pusbangtepa IPB be made by the Nutritionist.

In late November 1994, the Project Manager attended an International Workshop on Iron Deficiency / Anaemia in Jakarta. Here he learnt of new recommendations that iron could be given to pregnant women on a weekly rather than a daily basis. This was significant insofar as a weekly dose of iron can dovetail with the need for pregnant women to take chloroquine weekly. The Project Manager

then travelled to Bali and with the Counterpart Project Manager attended the World Public Health Association Congress from the 4th to the 8th of December 1994. During this congress the Project Manager presented a paper about 'Gender and the Health of Women in Jayawijaya' and both had opportunities to network and discuss issues with other delegates.

In 1995 the Health Coordinator visited AusAID's Healthy Start for Child Survival Project in Lombok and the PCI project in Ambon while the GAD Coordinator and another staff member visited the AusAID gender project in Merauke. In 1995 Sister Katur, a TBA from the PNG WATCH project visited the WATCH project to train people, including some staff from the project, on how to maximise the effectiveness of traditional birthing positions. Additionally, in July 1996 the GAD Coordinator and a PKK staff member went to Kupang to attend a 'gender awareness and health' meeting.

5.2 STAFF HIGHER STUDIES PROGRAM

- To provide the opportunity for higher studies programs for specialist staff

This program only existed in WATCH II as it was controversial whether funding for a PHC type of project should be channelled away from activities that are more important than the professional development of staff who are already quite well educated. Moreover it takes staff away from the project and their absence for such a short time cannot be filled yet they come to be sorely needed. However there still were certain activities under this sub-program. In 1993, the Project Manager Dr. Sukwan Handali went to Sydney to attend a training course in community development at the ACPAC Training Centre in Sydney. In February and March of 1995 the WATCH Monev Coordinator (Ir Saptano Priyadi) attended the same course as the Project Manager. He then went on to do post-graduate study in Brisbane. Saptano also received a scholarship to do English training in Bali in the months of April and May in 1996.

Based on her experiences as the WID/GAD Coordinator for WATCH, Susana Sрни was offered the opportunity to study for a Masters level degree. She felt that she would like to do this on her home island of Java when the project had finished. After much discussion about whether or not WATCH should fund a PhD for the project manager the idea was rejected on the grounds that this was a poor use of PHC funds. Dr Sukwan went on to leave the project in 1996 to pursue higher education in the U.S.A. In February 1998, the Counterpart PM, Dr. Zulfian Muslim and the PM, Drg. Gabriel Yuristianti Andayani attended a one month course at the Key Centre for Women's Health at Melbourne University with funding from a CHN3 scholarship fund. In June 1999 Dr. Yuristiani was able to attend a short course in "Reproductive Health" at the Universiteit van Amsterdam on a Ford Foundation Scholarship.

6. MONITORING AND EVALUATION PROGRAM

A major problem confronting the WATCH project in 1991 was how to go about collecting data for monitoring and evaluating the impacts of the program on the health status of target communities. This problem was approached in two ways. Firstly, activities were undertaken in order to revise and improve the governments Health Information System (HIS) as to generate reliable statistics on the health status of communities across Jayawijaya. The second approach involved the development of a system of surveys for monitoring those aspects of the project that could not be adequately monitored through HIS derived statistics.

6.1 Health Information System

National HIS

Since the late 1980s the MOH's attempts to establish a nation-wide HIS has been plagued with a variety of problems. The most significant of these were shortages of equipment (particularly computer hardware) and shortages of adequately trained personnel to undertake field data collection, collation and reporting, data entry, management, processing and analysis. In the highlands of Jayawijaya District, where shortages of human and material resources are more acute than in most other districts in Indonesia, this meant that the data generated by the National HIS was completely unreliable and did not meet the needs of the WATCH project. One reason for this is that the national system has far too many questions. For instance it requires all community health centres to complete a total of 36 forms with a total of over 1,000 questions per month. If village and subdistrict level health workers were to seriously attempt completing these forms they would have little time left for actually conducting health extension services.

These problems were further compounded by the fact the National HIS aimed to be a comprehensive and nationally standardised system which could generate directly comparable reports for all districts across the Republic of Indonesia. Whilst comprehensiveness is theoretically commendable and the ability to produce directly comparable health statistics for the entire nation is beneficial (particularly to national level planners and foreign aid agencies), the problem with standardisation is that many questions were locally irrelevant. The DHO's forms all too often referred to problems that do not occur (such as diseases that might only occur in a few locations, if at all) or else overlooked problems that may be of considerable local significance. This ultimately served to simplify the information whilst complicating the process of data collection and processing.

In response to these problems the Monev Coordinator set about establishing an alternative HIS which would be locally relevant and thus more appropriate for use in Jayawijaya. This HIS was primarily seen as a tool to be used for collecting data and generating information for monitoring and evaluation of the project. As it was also seen as becoming the official HIS for Jayawijaya, the Monev

Coordinator was to collaborate with personnel from the relevant divisions of the DHO²⁵ to create the HIS. Several activities were planned in order to develop the new HIS. Firstly, a baseline survey was to be conducted in order to collect information that would help to guide the revision of the HIS. Secondly, data collection forms were revised and simplified and data collection protocols were established to guide village and subdistrict level health workers in correctly completing the forms. Twenty-two village level data collectors (preferably health workers) were to be selected and trained in data collection, enumeration, documentation and evaluation. These data collectors would feed information to the Monev Coordinator as well as feeding information to health workers and community groups. WATCH also intended to create a computerised HIS database and to train workers from the three sections of the DHO responsible for the HIS in data collection, data entry, database management, general computer skills and quantitative data analysis skills.

It should be noted that the development of case management protocols supported the creation of the HIS since that improving the diagnosis of illness at the village and subdistrict levels improved the quality of information being fed into the system.

In WATCH I there was no separate monev program and the HIS was nestled within the Formal Health Program. In WATCH II it was felt that monitoring and evaluation activities required a greater emphasis and so it was made a separate program within the project. While in WATCH I the primary purpose of establishing an effective HIS was for monitoring and evaluating the project, in WATCH II the HIS was seen primarily for use by personnel in the District and Provincial Health Offices. In WATCH II the Monev Coordinator continued to evaluate and improve the forms used in field data collection and to complete the HIS database. On top of this he sought to increase the involvement of workers from the District Health Service, Community Health Centres and village level health workers in data collection, management, processing and evaluation through training and supervisory activities.

In WATCH III considerable effort went into consolidating the HIS in Jayawijaya. This involved further training and supervision of village level data collectors, record keepers at community health centres and district level record keepers / database operators, revising the HIS database software, and independent assessments of the HIS system.

Data Collection Forms

Although the process of revising and improving the monthly report forms required dialogue and negotiations with various stakeholders (puskesmas based doctors, DHO staff from the Pemulihan, KIA, P2M Section, missionaries, SP2TP puskesmas based staff), this activity was in many respects one of the most straightforward activities in developing the HIS. It involved collecting all forms used by the

²⁵ The sections of the DHO responsible for the HIS were the Rehabilitation (Pemulihan), Women and Childrens' Health (KIA) and Communicable Diseases Eradication Sections (P2M).

health centres and comparing the content of these forms with the data requirements of the DHO. This exercise highlighted the considerable incidence of duplication. The DHO had not designed to forms to be used for an integrated HIS; rather they were designed in response to the reporting needs of specific health projects and programs. Monthly reporting requirements were reduced from 34 forms with over 1,000 questions down to six forms covering 200 questions. The process of revising existing forms and developing new ones was done in collaboration with the DHO and also in consultation with the *puskesmas* based doctors and midwives during the annual in-service-training gatherings in Wamena. Village level health workers also reviewed these new forms and by mid-1995, data collection protocols and simple village based forms were produced and accepted by all health workers and health NGOs. *Even though WATCH has considerably reduced the scale of HIS reporting requirements the goal of collecting adequate health data remains elusive given the staffing and resource shortages in most Community Health Centres in Jayawijaya and their limited literacy and numeracy skills.*

Despite having been basically completed in mid-1995, revision of the forms continued throughout the remainder of the project. For example, in the final year of WATCH III, the HIS consultant Drs. Abdul Wahab recommendation that some report forms be altered by removing fields which distinguished between new and previously reported cases. His recommendations were consistent with the alterations made to similar report forms in the National HIS as well as feedback from many village level data collectors who were finding it difficult to make this distinction.

During WATCH II and III the project also assisted with the supply of various reporting forms. Providing forms was a positive decision in WATCH II but a decision made reluctantly in WATCH III after WATCH staff realised that the DHO had no available budget to provide these forms. Despite the efforts of a few diligent individuals who made photocopies or hand drew copies of the forms using their own resources, in most cases the breakdown in supply prevented data gathering activities. As it was important for WATCH to be able to evaluate the functioning of the new HIS they provided a further supply of forms whilst also stressing to the DHO that they would have to find a way to budget for the supply of forms in the future. The following table outlines the Report Forms and main Output reports of the Jayawijaya HIS.

REPORT FORMS AND OUTPUT REPORTS OF THE JAYAWIJAYA HIS

CODE	REPORT TITLE – INDONESIAN	REPORT TITLE – ENGLISH	DESCRIPTION
LB1	Laporan Bulanan 1 : Penyakit	Monthly Illness Report	Monthly report form used by staff of the Puskesmas, Pustu, BP, POD and Polindes to report data relating to cases of illness.
LB2	Laporan Bulanan 2 : Kematian	Monthly Mortality Report	Monthly report form used by the staff of the Puskesmas, Pustu, BP, POD and Polindes to report data relating to cases of death.
LB3	Laporan Bulanan 3 : Gizi, KIA Imunisasi dan Pemberantasan Penyakit Menular	Monthly Nutrition, Women & Children's, immunisation and infectious diseases prevention report	Monthly report form used by the Puskesmas, Pustu and Posyandu to report data relating to nutrition, /women and Children's Health, Immunisation and infectious disease prevention.
LB4	Laporan Bulanan 4 : Pemakaian dan permintaan obat	Monthly Pharmaceutical's Usage and Requirements Report	A monthly report form used by the Puskesmas, Pustu, BP, POD, Polindes and Posyandu to report on the pharmaceutical's usage and requirements.
LI1	Laporan Bulanan Pelayanan Ante-natal	Monthly Ante-natal Care Report	A monthly report form used by the Puskesmas, Pustu, Polindes and Posyandu to report data relating to pregnancy and ante-natal care activities
LI2	Laporan Bulanan Kelahiran	Monthly Births Report	A monthly report form used by the Puskesmas, Pustu, Polindes and Posyandu to report data relating to birth statistics
LKLB	Laporan Kejadian Luar Biasa	Extraordinary events report	This report is used by Puskesmas, Pustu, BP, and POD to report on unusual events or medical cases.
MA or LA 1 & 2	Master Posyandu Anak or Laporan Posyandu Anak	Monthly Child Health Reports	Monthly report forms used by the Posyandu to report data relating to child development.
SP2TP	Sistem Pencatatan dan Pelaporan Tingkat Puskesmas	Community Health Centre Recording and Reporting System	The monthly report forms used to collate other reports at the puskesmas level before being sent on to the DHO.
Computer Generated Reports			
LPLB	Laporan Pengiriman Laporan Bulanan	Monthly Report Submission Report	A monthly report on the submission of LB1, LB2, LI1, LI2 and LA reports by the Puskesmas to the DinKes. This report is generated by the HIS computer program.
LPW	Laporan Penyakit Wabah	Epidemic Disease Report	This report form is generated by the HIS to show sudden increases in the reported incidence of diseases.
LSBP	Laporan Sepuluh Besar Penyakit	Ten Major Diseases Report	A quarterly report containing data on the incidence of the ten most significant diseases throughout the Kabupaten. This report is generated by the HIS computer program from the data contained in the LB1 reports.
PWS			A series of summary reports on district health data based on the LB1, LB2, LI1, LI2, MA1, MA2, and LKPS reports.

Establishing a reporting protocol

It was more difficult to develop appropriate protocols for reporting because of the complications which arose throughout the discussions and negotiations between WATCH, DHO, *puskesmas* doctors, *puskesmas* staff, mission health workers, missionary nurses and voluntary health cadres. As neither

WATCH nor the DHO had complete or direct authority over many of these health workers they could not impose a system. They had to try to negotiate a system that would be acceptable to all parties and reaching genuine consensus through active listening and discussing is not a skill public servants are practiced in. Moreover many people involved in this task could not see the point of it which made these people particularly difficult to work with.

WATCH were involved in several activities to establish protocols / procedures. For one they established a Puskesmas Recording and Reporting System (*Sistem Pencatatan dan Pelaporan Tingkat Puskesmas SP2TP*) which provided a blueprint for facilitating and coordinating the flow of HIS data from the village level up to the DHO. This was a crucial guide for data collators (or SP2TP officers) from each *puskemas*. They also established codes such as 'identifier codes' for each *Puskemas*, *POD*, *BP*, *Posyandu*, etc. It was important to create this code in particular, as people will often refer to the same facility by several different names or by using various spellings. Even though these codes were established, it proved difficult to get people at the village level to complete these codes on report forms. *Perhaps a way around this would be to provide a cheap rubber stamp with the appropriate identifier code on it.*

WATCH sought to overcome the problem of people not knowing where to send forms (don't forget that there were three sections of the DHO sharing responsibility for the HIS) by devising a 'one door system' in WATCH II. Now there was clear reporting and feedback channels for the HIS reports to go from the villages to the *puskemas* and then up to the DHO. They also established daily record keeping ledgers and practices in village level health facilities. A number of registers were developed to assist with the filling in forms and this improved the daily recording keeping in subdistrict and village level health facilities. These registers were based on a system already in place in the *puskemas* in Tiom. They proved to be useful in raising the quality of reports as before people would forget the details of most cases long before it was time to prepare monthly reports.

One of the main factors which hindered the development of data collecting protocols was the limited ability of village level data collectors to make distinctions based on demographic factors, whether the cases were new or had been previously reported etc. A good example here is the misunderstandings of many health workers with regards to antenatal check-ups. Antenatal care report forms require women to have four antenatal checkups; one in each of the first two trimesters and two in the third. These visits are not listed numerically but rather they are marked according to which trimester the woman is in when she has a checkup. As most women in Jayawijaya believe that they are pregnant when their bellies are round, if they have checkups they have them in the last trimester. Therefore, within the National HIS their visit counts as the third, even though it is usually their first. Eventually it was agreed that the reporting protocol should be altered to reflect local practises.

Training and Supervision of Subdistrict and Village Level Data Collectors

The HIS relied upon the willingness of subdistrict and village level health workers to collect the vast majority of field data. In order for the system to operate effectively each *Puskesmas*, *Pustu*, *BP*, *POD*, *Polindes* and *Posyandu* were required to submit around six once-monthly report forms to the designated data collators in their respective *Puskesmas*. Although the TBAs were not expected to submit reports, the village midwife was expected to collect relevant information from the TBAs to include in their monthly reports. Supervision of data recording and reporting activities by village level health workers was delegated to the nominated *puskesmas* personnel. Once the reports were submitted the data would then be collated into the SP2TP report forms covering the entire subdistrict before being sent on to the relevant section of the DHO.

WATCH viewed the training and supervision of HIS activities at the subdistrict and village levels as being extremely important. Training in HIS data collection was also linked to training in the use of Case Management Protocols as the two systems were considered to support each other. During WATCH I staff aimed to train and supervise mantris and cadres in basic data collection, enumeration and data collecting protocols but the difficulties involved in this task were initially underestimated. It was found that the extremely low level of numeracy and literacy skills of many subdistrict and village level health workers ensured that the rapid transfer of data collection skills was more difficult than had been envisaged. Furthermore, given the large target area and scope of activities as well as the limited human resources WATCH personnel could not provide adequate supervision of all data collectors. Only in areas where missionary nurses were permanently stationed (ie. Soba, Koropun, Lolat and Mapenduma) could adequate levels of supervision be achieved.

During WATCH II and III training and supervision activities were increased significantly. Yet it was only in WATCH II, when the project target area was limited to a manageable size, that project staff were finally able to provide the level of training and supervision required for the system to be operational at the village level. Paradoxically, at the time when training and supervision was more adequate, the breakdown in authority and morale in the Kanggime Puskesmas prevented quality data being produced. Consequently, during WATCH III reasonable data emerged from HIS activities in Kembu-Mamit but the health data from Kanggime subdistrict remained poor.

Consultants too assisted with training. The HIS consultant in WATCH III, in conjunction with the WATCH Health Coordinator and the *Pemulihan*, KIA and P2M sections of the DHO, carried out training of *Puskesmas* level data recording (SP2TP) workers from 13 *puskesmas* in the correct channels for the HIS reporting and the one door system.

A major obstacle in realising the HIS and one that persisted throughout the entire project was the health workers' lack of motivation to carry out data collection and collation activities. As the success of the HIS hinged on the cooperation of these people this was a serious issue. *Their lack of motivation was related to a variety of factors. For one, as many health workers in remote regions do*

not receive a wage from the government (they may still be employees of the missions or local NGOs or else are volunteers) it is not in their interest to help the government by collecting statistics. For another, puskesmas data collators reported that reports were often not completed because of the absence of feedback and supervision from the DHO. Even when there was feedback staff in the puskesmas would often react defensively. As this boiled down to communication problems, the DHO should consider how to open the channels of communication between them and the Puskesmas. Moreover, the power of the DHO to either punish or reward government health workers is severely limited due to internal organisational constraints (see section 1.7). In general, the lack of motivation amongst health workers was related to the fact that the purpose of the HIS remained obscure to many of them as well as to many district level personnel. In addition these workers do not see the system as providing any tangible benefits.

The poor diagnostic and numeracy skills possessed by many health workers was undoubtedly a contributing factor for their lack of enthusiasm. Health workers would either make up figures or else if they feared displaying ineptitude to their superiors, they would not fill the forms in at all. Many subdistrict and village level health workers were suspicious of the need to gather data as it might seem to them to be an attempt by the DHO at surveillance.

HIS Database Program

Whilst the WATCH Money, Mr. Saptono Djoko Priyadi, was responsible for creating the basic HIS database program and was capable of completing the program, this was considered to be an inappropriate use of his time, which should be spent on core monitoring and evaluation activities. WATCH II therefore planned for a consultant computer programmer to be brought in to complete this work.

In February 1995 Mr. Eka Surya, a computer programmer consultant, came to Jayawijaya to assist with the programming. In April 1995, Dr. Haripurnomo, an epidemiologist from the department of epidemiology at the Universitas Gadjadara (UGM), came to Jayawijaya for several weeks to visit several field locations in order to gain a better understanding of the context in which the HIS was required to operate. He also conducted meetings with DHO staff and *puskesmas* based doctors regarding the HIS and reviewed the progress WATCH had already made on revising the report forms and reporting protocols and the programming of appropriate software for the HIS database. He generally supported the approach taken by WATCH and also provided further input regarding reporting protocols and the HIS database software. The Money Coordinator followed up this consultancy by visiting Dr. Haripurnomo when he was in Yogyakarta. During the course of this visit the consultant and Money Coordinator were able to finalise most of the programming.

By mid-1995 the program had been completed and after considerable negotiation with the DHO and health centres it was finally agreed that it should be trialed across the district. However, the

first trial run of the program was delayed until July / August 1996 due to delays in getting report forms printed and distributed as well as because of difficulties with *puskesmas* staff completing the forms. The results of this initial trial run appeared encouraging for *puskesmas* doctors who, for the first time could get tangible outputs from the HIS. However, a number of flaws and bugs in the program were uncovered during the trials in 1996 and 1997. Some of these related to programming errors. One of the main causes of programming errors was the fact that several different people had been involved in programming and there were cases where the codes or approaches they had used conflicted. Other problems were related to oversights (including the millennium bug) or to details that the programmers had not had time to attend to, such as automated programs for putting titles on each report. Other problems related to software design and definitions. For example it was found that according to the definition of an epidemic used for generating the Epidemic Diseases Report (LPW) any increase in the reported frequency of a specific disease would result in its being classified as an epidemic. Consequently a very high percentage of diseases were showing up as epidemics each month.

The Monev Coordinator attempted to fix some of these problems but his commitment to other activities, most notably the annual surveys, meant he didn't have sufficient time to complete all of the required alterations during WATCH II. In response to these programming problems (and also to conduct a review of the HIS) another consultant was employed in WATCH III. Mr. Abdul Wahab came to Wamena on the 24th of February until the 6th of March 2000. He did some software revisions, conducted a training workshop and did the HIS assessment however as he was not able to complete the software revisions in the time available WATCH requested that another consultancy be arranged.

In mid 2000 the AusAID Technical Advisory Group (TAG) questioned the value of the HIS resulting in AusAID not funding any further work on revising the program. Despite not having been finalised, the software is functional and the new HIS is a considerable improvement on the system, which was nominally in place prior to WATCH. However, it is clear that the sustainability of these activities is firmly in the hands of the DHO because it relies on effective supervision and communication between the DHO and subdistrict and village level health services.

The program developed by WATCH and UGM used a Pascal programming language and a DOS interface. The use of a windows interface would make it much easier for people with limited computer literacy to use. However, it must be remembered that the first widely acclaimed windows operating system for PCs, Windows 95, was not released until after most of the initial programming was completed. Furthermore, the DHO in Jayawijaya still relies upon computer hardware that would be considered obsolete in other places. Up until very recently there computer was not capable of running windows applications.

Bugs occurred in the software at least in part because too many different people were involved in the process of developing the program. In hindsight it may have been better to allow the

Monev Coordinator to focus his attention on the HIS during WATCH, and get somebody else to work on the surveys (see also section II / 6.2 for more elaboration on this point).

Training of DHO staff

It took some time to develop a good working relationship with all areas of the DHO responsible for the HIS. Even at the end of the project there was a degree to which this section was disinterested as the Indonesian health system provides no incentives for working harder and an effective HIS would mean more unpaid work.

Training DHO staff largely focused on the areas of on-going data collection and analysis and operation of the HIS database. Most of this training was done by the Monev Coordinator and in WATCH III Health Coordinator but the consultants Drs. Haripurnomo and Wahab assisted during their consultancies.

Throughout late 1992 to early 1993 WATCH also used specially created modules to train DHO workers in basic computer applications including DOS, Wordstar and Lotus. This activity was hindered by the lack of computers at the *puskesmas* to assist with completing the SP2TP reporting requirements. At the District level there was only one computer which was theoretically to be used for HIS. However, in practice this computer was usually used for a variety of other purposes. The DHO computer experienced breakdowns in 1995 and 1996, chronologically corresponding with the first HIS trials. During WATCH II the option to provide SSB radios to each *puskesmas* was considered, as it would enable them to submit reports via radio (and also for emergency use). This was not pursued as it was a quite expensive option and did not really fit with WATCH's model for sustainable PHC. As a sign of their commitment to the new HIS the DHO agreed to place SSB radios in each *puskesmas*. By the end of the project nearly every *puskesmas* was equipped with an SSB radio. However, radio communications between the DHS and the *puskesmas* were still not operating maximally. At the *puskesmas* level this was due to several factors including equipment failures, poor maintenance and even the removal of SSB sets and/or batteries from the *puskesmas* environs. On the other hand the DHS often failed to maintain a schedule of communications due to the absence of nominated radio operators and poor training of and coordination / scheduling with *puskesmas* radio operators.

Evaluation

Evaluation of the HIS was based on software trials and feedback when training people to use the HIS as well as a more structured evaluation from the Recovery Section of the Health Unit. Evaluation was also done by the HIS consultants and by the AusAID TAG team in 2000.

Outcomes

By 1997 the HIS developed by project staff and the Jayawijaya District Health Office was generating considerable interest amongst health planners in Jakarta and other parts of Indonesia. Saptono, the WATCH Monev Coordinator and principle force behind the development of the new HIS was invited to present a paper on the new system to a national conference of health directors and Dr. Zulfian Muslim, Head of the DHO and Counterpart Manager of the project, was selected as part of a team to formulate a new National HIS. Based upon the initial successes of the Jayawijaya HIS the DHO was given a special exemption to operate outside of the national system in order to be able to adequately trial the system for at least five years. WATCH personnel were also asked to make a presentation on the Jayawijaya HIS to a general briefing for 32 districts that were to be given autonomy to determine their own health budgets in 1997-1998.

Whilst the Jayawijaya HIS still has many flaws relating to its ability to collect appropriate data in an effective manner, the development of the HIS should be viewed as a success insofar as it provided an invaluable experience in planning for health planners in Jayawijaya and Jayapura and even by virtue of the way it has influenced thinking about health planning on a national level. Given the current move towards greater regional autonomy in Indonesia the Jayawijaya HIS experiment is likely to generate further interest from health managers and planners across Indonesia who are seeking systems that can assist with planning, implementing and monitoring local health extension services. For this purpose, the lessons learned from the WATCH experiment are invaluable and attempts should be made to develop similar, but improved local HIS's, perhaps in an area where the availability of suitable human and material resources affords a greater chance of success.

Whilst the project's commitment to developing the HIS clearly made an impact at the district, provincial and national levels, the ongoing sustainability of the HIS requires a much stronger commitment on the part of the DHO. In particular, after the WATCH project the DHO needs to allocate money for the printing and distribution of reporting forms and to provide adequate supervision of use of the HIS. Furthermore, as the HIS consultant Drs. Wahab suggested, problems that occurred due to poor coordination between the three sections of the DHO responsible for the HIS could be overcome by the DHO creating a new division that is entirely responsible for the HIS. To maximise the chances of an effective HIS, this division should have at least two full time staff and one computer expert.

Although developing a locally specific HIS is commendable, it remains questionable whether or not focusing on the development of a HIS in a place like Jayawijaya (where there are shortages of equipment and human resource) is an advisable deployment of resources. Whilst having better quality data to use in planning purposes is undeniably valuable, allowing data collection and processing activities to detract from the extension of health services could make the health situation worse and undermine community confidence in the formal health care system.

If a national strategy to develop regionally specific HIS's is adopted, particular attention should be paid to maintaining a simple and flexible model. For example, standard codes for database variables and a resource package from which each district could design their own report forms, training materials etc. would be needed for each district according to local conditions and needs. If these ideas were implemented then each district could have a locally appropriate system but all systems could still be linked together to a certain degree through the use of mutually intelligible coding. Yet such an approach would need to be supported by considerable inputs of training, supervision, logistics, etc. The translation of materials would also be important in areas where Bahasa Indonesia is not widely understood.

6.2 SURVEYS

In the Design Document for WATCH I it was proposed that an initial baseline survey be conducted between the fifth and ninth months of the first project year with mid-term and end of term surveys to be conducted during the second and third project years. The purpose of these surveys was to collect qualitative and quantitative data both for use in the establishment of the new HIS and also to provide material for use in the monitoring and evaluation of project interventions. As such the baseline survey was included as an activity within the HIS sub-program, which was itself part of the formal health sector program. This structuring devalued the importance of survey activities as a unique tool for monitoring and evaluation.

The pre-planning of how the surveys should be carried out and what should actually be surveyed was glossed over. All that was said was that qualitative and quantitative data on health was needed, local health workers and/or school teachers might be used for collecting data at the village level and that four centres covering approximately 100 villages each and near Wamena should be surveyed. Furthermore, the mid-term and end of term surveys were tacked on as an after-thought to the baseline survey, with no budget allocation provided for these activities. The true extent of the difficulties involved in conducting adequate data gathering activities for monitoring and evaluating the project soon became apparent after the Monev Coordinator set about selecting target areas, preparing questionnaires and selecting and training data gatherers.

In the design document it was stated that the project needed a baseline survey to collect qualitative and quantitative data on health. The data collected may have been adequate for developing the HIS but it was clearly not adequate for monitoring and evaluating a multi-sectoral project like WATCH. WATCH faced a large challenge in that although the goal of the project was to improve women and children's health, the outcomes of many of their varied activities were not directly related to health and so could not be measured through health and nutrition surveys. If WATCH were to monitor and evaluate their huge range of activities then many variables and indicators would need to be

established, and a wide range of methods, including a very long and involved questionnaire would be needed for data collection. The task of preparing an adequate questionnaire by staff, most of who had only been living in Wamena for a few months and who were not familiar with the cultures there, was enormous and unrealistic. This had serious repercussions for the project as inadequate baseline material made it hard to do subsequent evaluations on the effectiveness of the project and correspondingly, to improve PHC activities.

A large percentage of survey activity in WATCH I focused on anthropometric nutrition surveys which included measuring the upper arm circumference (MUAC), height and weight of subjects. It soon became apparent that the standard correlations between height and weight that were used by the central authorities, were applicable for measuring people of Malay genetic stock and could not be used to measure nutrition and malnutrition amongst people of Papuan genetic stock. Project staff went on to modify the cut off points and establish their own height/weight correlations, which were more appropriate to the averages found in the target communities. While these findings were published in leading Indonesian medical journals, they were of limited value in monitoring and evaluating the project. This is because anthropometric surveys actually tell us very little about the success and failures of project activities.

In the design document it was stated that the baseline survey should cover four centres incorporating approximately 100 villages. Yet given the fact that the Monev Coordinator had only recently arrived in Jayawijaya and that WVII's experience in the district was also geographically limited at this point in time, it was not immediately apparent just how one should sample for areas in Jayawijaya. Ultimately, ease of access was the key criterion used for selecting survey locations. This was because of the imperative to complete the survey within a relatively short period of time as well as the guideline in the design document that sampling should focus on areas that were reasonably accessible from Wamena. The end result was a sample that only covered the Dani, Lani, Yali and Hubulah ethno-linguistic groups, all of whom belong to the Dani-Ngalik ethno-linguistic family. This excluded many other groups whose uniqueness should have been acknowledged and accounted for. For instance, information from the Star Mountains subdistricts was excluded as project staff didn't even begin working in this region until several months after the baseline survey was to be completed.

In accordance with the recommendations of the design document, two groups of data collectors were selected: the first was made up of WVII staff who had been stationed in Jayawijaya for some time and the second from local community leaders such as school teachers. These data collectors were given a short training course before being sent into the field. Due to a number of reasons the results of this survey were of poor quality. As many data collectors had not lived in Jayawijaya for long they were not sensitive to the nuances of their cross-cultural interactions as they lacked empathy with local cultures. It seemed also that they did not understand the significance of the questions or the importance of the survey and so they cared little for the outcomes. It was also difficult to collect data

from so many places that were spread over such a large area. Often, when faced with the prospect of a long and arduous walk over rugged terrain, data collectors would simply doctor the forms or not even bother with the forms at all.

The baseline survey was completed by mid-1992, however, as a result of problems with the quality of work by the data collectors, the results of the survey proved to be of very limited use in either project monitoring and evaluation or in establishing the HIS. Whilst some follow up survey work was carried out in 1993, for the rest of WATCH I annual surveys came to be almost entirely abandoned. Staff preferred to gather most of the data in the course of their other duties. Even though this improved the quality of available data, it also meant that it took a long time to collect data and it distracted project staff from doing other duties. What the project clearly needed was better techniques and better trained data collectors if future surveys were to be successful.

To their credit, for the rest of WATCH I staff experimented with a range of observational and participatory methods for collecting ethnographic data. These on-going data gathering activities resulted in the collection of a considerable amount of qualitative data that were more useful for guiding project interventions than had been the data collected in the formal survey. However, lack of quantitative data was seen as a problem in evaluating the progress of the project. The review of WATCH I by Dr. Dibley highlighted these problems encountered and recommended that a monitoring and evaluation (monev) team should be established and that technical specialist consultants should assist with improving the surveys and other monitoring and evaluation related activities.

Desire to overcome the significant obstacles to developing successful surveys led to a more focused approach in WATCH II. In particular, the following measures were taken to overcome problems that had manifested in WATCH I:

- Under the WATCH II design annual surveys were considered an independent sub-program within the newly created monitoring and evaluation program. As such they were formally separated from the HIS activities and were also allocated their own budget line.
- The purpose of the surveys was explained in more explicit terms. In the new design document it was stated that surveys would measure; nutritional status in the target communities, the success of implementing training in health services, the effective use of equipment, the effectiveness of case management protocols and any behavioural changes in the target communities which related to community development and gender relations.
- There was more focus on improving sampling methods.

- While quantitative data was not overlooked, qualitative methods were recognised as the most appropriate for monitoring many dimensions of the project for they were capable of generating richer data regarding the underlying changes in thinking and behaving in the target communities.
- The money team should be made up of students from the Wamena SPK. Under this arrangement three groups of six students were to be trained and employed as field data collectors on a rotational basis during the WATCH II phase.
- The task of achieving relatively in-depth coverage over a wide geographical area was to be facilitated by conducting surveys on a more or less continuous basis, with surveys being held every few months in different areas rather than discrete baseline, mid-term and end-of-project surveys.
- It was also proposed that further technical assistance be used to design better surveys. In particular the consultant epidemiologist and ethnographic study team were to help identify appropriate ways to monitor health and social change in the target communities. Other technical consultants were required to provide input about appropriate methods and indicators for monitoring changes within their own specific areas of expertise.

A four-month lead in period was planned before the first survey was to begin. This was considered enough time for the design of surveys, selection and training of the money team, and for input to be received from the ethnographic and epidemiological consultants. There were a series of delays however that ensured that in the first year of WATCH II no formal surveys were conducted. Unfortunately the ethnographic and the epidemiological consultants, whose inputs were so valuable for designing the surveys, came many months after they were hoped to arrive. Furthermore, the Money Coordinator was overseas studying in Australia for six weeks in January-February 1995, which caused further delays in starting survey activity. The project staff used this extra time to focus on refining the approach, on developing indicators and on designing a questionnaire.

During this period WATCH staff were also introduced to the ARIFF system which was originally developed by the DOH Directorate for Community Participation in order to measure the results of their posyandu program. The ARIFF system uses a table of indicators for group progress, including indicators for measuring both material and attitudinal changes. Point scores are allocated to each of the indicators and thus scores can be tallied for each group according to their achievements in relation to the indicators. The scores thus generated are then adjusted so indicators that are not relevant to that group are not counted in the final score. The final scores can then be compared to each other and can also be ranked on a results table to obtain a picture of the relative progress of the group. WATCH staff adopted this system and set about modifying it for use in measuring the outcomes of the CD and GAD programs and the progress of community development groups. They established their

own system of indicators and also a results table that ranked groups according to four levels of self-reliance. Despite some limitations and on-going problems with the determination of appropriate indicators, this system proved very useful and was maintained throughout WATCH II and III as the basis for the monitoring and evaluation system for the CD and GAD programs.

By mid-1995 the indicators and questionnaire were ready and the first survey was planned for January 1996. During late 1995 SPK students were interviewed and selected for the Monev team. Whilst it was originally planned that three groups of six SPK students would be used as data gatherers, in the end 51 SPK Students were trained as data gatherers and of these 34 were selected to participate in the first field data surveys. The survey was finally conducted in April 1996 because the plans to conduct surveys in January 1996 had to be postponed because the Mapenduma Hostage Crisis which prevented the Monev team travelling into the field. Despite the care taken with the project design, once again the data collected was low in reliability and validity. The reason for why this survey was not successful, it seems, was based on the inability of project staff who trained the SPK students to adequately communicate the purpose and methods of the survey. This discrepancy in understanding was possibly a contributing factor for the apparent lack of motivation and commitment that the SPK students had in conducting the questionnaire. Moreover, there were few SPK students who had adequate numeracy skills and this made it very difficult for them to undertake the measurements (especially down to millimetres) and calculations required in the surveys. On top of this, there was the ongoing problem with inadequate supervision.

After this initial survey, surveys were subsequently carried out in different areas at roughly two monthly intervals. Further training was given to the Monev team in order to overcome some of the problems encountered in the first survey and the questionnaires and methods used were also reviewed, refined and simplified. The decision to use SPK students appeared at first to offer little improvement in terms of quality and reliability of data over the use of itinerant data collectors. However, over time WATCH staff were able to overcome some of the problems relating to poor numeracy and measurement skills and lack of understanding as to the importance and purpose of the surveys by simplifying the survey designs and improving their teaching methods. By giving the students another chance they were able to improve their skills as well as raise their level of commitment to the surveys.

The WATCH II end-of-project survey was a larger and more intensive final survey. On top of the questionnaires, nutrition surveys and data collected through the HIS the Monev Coordinator introduced the system of Participatory Learning and Action (PLA). This was an interesting development as the older version of PLA, PRA (Participatory Rural Appraisal) had been used in the later part of WATCH I and throughout WATCH II as a tool for group planning and identification of gender issues. PLA can also be used to create data that can be used in combination with other methodologies to enhance their validity. As well as using PLA to facilitate such activities as group decision making, designing IEC materials and observing group progress, from the last six months of

WATCH II and throughout WATCH III PLA surveys were also used as part of the formal monitoring and evaluation system. PLA offers a great deal of potential as a method for data collection as it fosters a good relationship with the community through allowing them to gauge how they are progressing, to react to the project initiatives and to offer ideas as to how they can improve.

Another novel approach to evaluate WATCH II was to conduct a survey to gauge the opinions of the missionaries in Jayawijaya. It was useful to listen to missionaries as they had considerable experience with the project's activities at the village level and also because of their knowledge about Jayawijaya as many of them have lived and worked in these areas for up to 40 years. This survey took the form of a written questionnaire. The respondents included missionary nurses, community development workers and evangelists. All of the respondents were generally positive about the project particularly as it had provided additional support for health and CD activities in their areas. Some respondents went to great length to respond to the survey, in some cases writing as much as 8 or 10 pages. The comments made in these surveys²⁶ often supported criticisms from other sources. While the expatriate opinion surveys provided some useful data for project evaluation and this data was only anecdotal it was of limited use for project evaluation.

Baseline, mid-term and end-of-project surveys were planned to be the backbone of the WATCH III's monitoring and evaluation system. From the outset, the task of conducting these surveys was considerably simplified both by virtue of the experience gained and methods established during the earlier phases of the project and also, through the reduced size of the project target area for WATCH III. However there were setbacks for the project when the Monev Coordinator left to take up the position of WVII Project Office Manager in Wamena and WATCH could not find a suitable person to replace him. As WATCH III was a year shorter than either of the two previous phases of the project, the surveys had to be conducted at shorter intervals. Thus, a much more efficient approach, with less room for trial or error, was required if the surveys were to be successful.

Field data collection for the baseline survey was conducted in four stages between September 1998 (about six weeks prior to the formal commencement of WATCH III) and January 1999. As there was word that the project was likely to be extended from as early as January 1998, staff set about preparing to do surveys about 10 months prior to the formal commencement of WATCH III. Prior to the actual commencement of the third project phase staff had already established suitable indicators, considered the advantages and disadvantages of previous methods and approaches for field data collection, recruited and trained the Monev team, and even began the collection of data. This time the

²⁶ These comments included that the project area was too large and thus the outcomes were inconsistent, the project was considerably understaffed, the initial baseline surveys were weak, relationships between coordinators and community cadres were inconsistent, too much of the project budget went into administration and overheads and not enough went into village level activities, and the lack of supervision and follow up sometimes resulted in CD groups misusing money or submitting false reports.

Monev team was made up of 15 final year SPK students and was headed by the Health Coordinator, nutritionist, midwife and health assistant. The GAD/CD personnel also assisted the Monev team, particularly with the PLA surveys.

Prior to the survey a three-day training course was held to teach the team about various aspects of conducting a survey. As well as information specifically relating to conducting surveys, communication skills were covered in this pre-survey training. The main reference used for preparing this training was the *Survey Trainers Guide for PVO CS Project Rapid KPC Survey 1994*. There were two extra surveys employed by staff, data collectors and cadres in WATCH III. One was a health questionnaire that was borrowed from the Child Survival Support Program at John Hopkins University. It aimed to capture the incidence and attitudes of such things as breast feeding practices and child nutrition and health, maternal health and nutrition, diarrhoea, malaria and pneumonia, payment for health services and medicines, and environmental health including clean water and latrine usage. A separate questionnaire was designed to gather data about socioeconomic factors and changes in the target communities. This information was principally for monitoring the GAD and CD programs.

The sampling method to be used in WATCH III had to be chosen carefully. Whilst the size of the new target area had been reduced considerably from the first two phases, it was still a very large area (over 3,800 km²) and most villages were only accessible by foot. Therefore it was considered unfeasible to collect data by visiting each small community, or even each administrative village (*desa*) centre. Instead the Monev team used a mixture of selective and random sampling to select a total of 10 villages in the two subdistricts. The criteria for selecting survey locations was that sample villages should be grouped according to their proximity to transport and health services so that a range of geographical conditions and locations could be represented. 50% of the locations were to be located within an hours walk of the airstrip and puskesmas, 30% should be located within half a days walk of the airstrip and puskesmas whilst the remaining 20% should be located over half a days walk from the airstrip and puskesmas.

In addition to the health and social-economy surveys, nutrition surveys were conducted using two popular methods: the 24 hour recall method (getting respondents to describe what they remember eating during the last 24-hours) and anthropometric surveys (ie. height, weight and middle upper arm circumference measurements). The baseline survey also drew from a range of secondary sources. The most important of these was the data generated through the HIS. Other sources included the records held by the Bureau of Statistics, data from the Puskesmas, subdistrict Administration offices and village level health posts in across Kanggime and Kembu-Mamit subdistricts. Any reports of maternal or infant mortality were also cross-checked with the mothers whose babies were reported to have died and the sisters of women who were reported to have died.

Participatory Learning and Action (PLA) was also strengthened and prioritised as a method to be used in WATCH III's Monev system. In September (in Mamit) and October (in Kanggime) of 1998 trained 204 cadres in PLA techniques including the ten seed method for determining family budgetary priorities and the wealth ranking technique for determining the approximate wealth distribution within the community. These trips were also useful for the Monev team to orient themselves amongst the new target communities and to establish an appropriate approach to sampling for the annual surveys. After this training the cadres were required to return to their respective groups and carry out a group mapping assignment including an activity plan and group expectations over the next two years. Unfortunately, the initial group mapping exercises were not entirely successful as there were problems with cadres not understanding the point of the exercise and with difficulties in them expressing their ideas in Indonesian (all but one of project staff couldn't understand Lani). Moreover, as almost a month would pass between the PLA activities and the collection of the data, cadres often became distracted from completing their task. There were also still many unresolved problems with the registration and membership of CD groups. The groups that were formed in WATCH I were not operating effectively. It was found that different people from the one family would be registered in different groups or that groups might be registered both with WATCH and with the WVII Area Development Program which covered Karubaga, Kanggime and Kambu-Mamit. This proved problematic both for conducting PLA surveys and for interviewing group members. Once group formation problems had been resolved and when project field staff had more time to provide further supervision and support, group mapping and planning exercises were more successful but these results manifested after the baseline survey and had to be shifted back into the mid-term survey.

The Monev team returned to the field between the 10th – 25th November 1998 to conduct more surveys (health, social-economic and nutrition) as well as to visit various health facilities. In this trip three in-depth PLA surveys with 3 groups were continued and the community maps/activity plans were collected. In December 1998 the Health Section of the Monev team spent a further two weeks in the field completing more health and social-economic questionnaires, nutrition surveys and cross checks on data previously collected. Final field data collection for the baseline was conducted in January 1999. In this trip there were more PLA surveys with a further three groups and more field questionnaires.

The results of this survey were mixed, as the results from the health section were generally adequate yet on the other hand the results about the gender and community development section were quite weak. It was considered that as there were still problems with group registration and membership, the survey failed to produce baseline data directly relating to the initial status of groups or group members. Instead staff collected information on social conditions, agriculture and animal husbandry, local markets and gender relations based on their observations while in the field. As such the data was highly subjective and open to debate. Whilst this information was useful in guiding project interventions it was not an adequate base for the measurement of social change.

The sampling methods used in the survey were also poor as they omitted a great deal of the target area. It was a major oversight that the most remote and disadvantaged communities (those lying in the lower reaches of the Toli river and on the northern slopes of the Kembu Range) were not represented at all. The technique of randomly selecting subjects by interviewing whoever was met whilst walking around each centre would have introduced bias in the sample. As the Monev team looked conspicuous, it is doubtful that selection was all that random. Only people motivated and able to meet with the visiting Monev team would have been interviewed. In selecting respondents to the health questionnaire, only women with babies under two years old were chosen as many of the questions related only to infant and maternal health. With regards to the socioeconomic questionnaire, thirty out of the 96 CD groups were questioned about the status of their group and their perceptions of health, gender, social and economic issues. For the sake of efficiency most of the respondents to this questionnaire were the same respondents for the health questionnaire. Whilst this 'doubling up' of questionnaires considerably reduced the workload for data collectors, it increased the time and patience required by each respondent. Furthermore, the target of 30 respondents at each of the ten surveyed villages proved to be too high.

These issues were dealt with when staff prepared for the mid-term survey over a two-week period in February 2000. To partly make up for not having a Monev Coordinator, the Monev from the Alor Community Based Health Project (ACBHP) came to Wamena for approximately one month early in 2000 and assisted with formulating a better approach for gathering data for the gender and development survey and improving the questionnaires and sampling methods. He also helped staff to conduct a refresher training course for the SPK students involved in the Monev team.

The Monev Coordinator from ACBHP recommended the use of a rapid sampling technique that was originally designed and developed for the WHO's Expanded Program on Immunisation. This technique employs a two-stage process for respondent sampling. Firstly, 30 clusters are defined and selected. These clusters should have the same number of subjects in them regardless of the size of the area. As there was no reliable population data and as the government administrative boundaries in the target area were unclear, churches were chosen as the most appropriate boundaries to draw clusters from and 17 clusters were drawn in Kanggime and 13 were drawn in Kembu-Mamit. Secondly, simple random sampling was done during visits to the field. They selected 10 people to make up a cluster by simply sending out word that the survey team had arrived to select women with children between 0 and 23 months old to interview. This was logical in light of the fact that settlements in the project area were spread over large and extremely rugged areas and so it was considered unfeasible for the survey team to reach these remote settlements and collect a proportionally representative sample. In most cases more potential respondents turned up than was required and so the Monev team simply selected respondents via lottery. The project fell 30 short of the ideal number of 300 respondents. Once in the field the Monev team was broken down into 3 groups with each group surveying between 8 and 11

clusters. The results of interviews, once their accuracy was checked by the team supervisor and classified according to cluster, were then sorted using the computer program EPI Info 6.01 which was developed by *The Division of Surveillance and Epidemiology, Centre for Disease Control and Prevention, CDC, 1994*.

During the mid term survey, two questionnaires were drawn up for the Gender and Development section of the survey. The first of these targeted members of WATCH groups only and collected data about group activity. The second questionnaire targeted both group members and a control group of non-group members. The purpose of this questionnaire was to measure the impact of participation in WATCH activities on the attitudes and behaviour of group members as opposed to non-group members. It focused on the dimensions of skill transfer, community financing and community health. This partially made up for the lack of baseline data on the status of groups and group members. The data from both questionnaires was also used to generate a picture of each group's progress according to the ARIFF system.

Whilst the results of the mid-term survey were of a high standard and quite useful to the project's needs for monitoring and evaluation, there was still general problems with the surveys. For one there were too many variables and indicators to be surveyed and consequently the questionnaires were too long. Also even though their sampling technique was a considerable improvement on previous techniques, the lack of reliable demographic data and knowledge of local conditions renders it questionable how typical the sample was. Certainly relying on people to be come and speak with the Monev team runs the risk of introducing strong bias. After all only the most motivated, able bodied and/or least busy people are likely to be able to come thus quite possibly overlooking a large section of the community.

By the time the mid-term survey was complete it was becoming more apparent to project staff that increasing political uncertainty was making it difficult to travel to the target areas. Many group facilitators were abandoning their roles with WATCH in favour of a position within the local militia / Papua Taskforce. In a situation where so many extraneous variable were seen to impact upon or detract from the project's success it was considered unlikely that the suitability of the WATCH model for PHC in Jayawijaya could be adequately tested and measured. By mid-2000 WATCH staff, the Project Director and AusAID agreed that the end-of-project survey should be abandoned due to security concerns which made it unlikely that the end-of year surveys would yield conclusive data about the project impact and effectiveness in the target communities. This decision proved to be highly strategic as in early October 2000, precisely at the time the survey teams would have been in the field, the project staff were evacuated from Wamena.

General comments:

When conducting surveys for project monitoring and evaluation planners need to be very clear about what the data is for. It is only worth collecting data that are clearly relevant to the issues being addressed because too much data collection detracts from working on other important tasks and is very demanding on the subjects. This issue was apparent in WATCH I when staff became preoccupied with measured nutrition even though anthropometric surveys cannot provide data with explanatory value.

The decision to use SPK students as data collectors was an excellent one. It facilitated the transfer of skills between project staff and SPK students through allowing the latter to be involved in a practical research exercise. As many of these students have already or will shortly become the next generation of health workers in Jayawijaya, they will be more aware of the importance and methods required for on-going HIS data collection.

As was mentioned earlier the Monev Coordinator's strengths clearly lay in computer programming and empirical / quantitative data analysis. Thus to get him to work on designing surveys while a consultant programmer was employed to work on the HIS in the second phase of WATCH meant that both sub-programs suffered. After all the HIS programming was not completed even during WATCH III and the annual surveys were weak because they required more qualitative approaches which weren't the Monev Coordinator's strength. In hindsight we can see there was enough work for one person to work full time on the HIS sub-program and another to work on the surveys and other general monitoring and evaluation duties. The lesson here is that Project Managers should clearly recognise their staff's skills and if possible allow them to focus on duties that they will excel in.

PLA is an appropriate method for working in the Papuan highlands. The two way flow of ideas is important for gathering qualitative data for monev purposes and also to allow villagers to talk about their hopes and needs. It is culturally sensitive to allow Jayawijayans the opportunity to speak and for others to listen. As we have noted, although PLA is designed for community capacity building it can be used for Monev purposes. However because PLA is an activity that needs to operate at the community's pace, project staff were not initially successful in using PLA as a Monev tool because they rushed the process to fit the PLA mapping activity within the time constraints for the baseline survey. Additionally, instead of training a large number of cadres to be PLA facilitators in a week, there would have been better outcomes if a few carefully selected people who would be responsible for conducting PLA surveys over a wider area were trained thoroughly. In this respect the use of the FOs in WATCH II was ideal approach to PLA survey facilitation as FOs were specifically selected based on their ability to facilitate and motivate, they formed a small enough group to make intensive training feasible and they were strategically located in each of the thirteen areas.

Analysis of survey results was generally not strong which was a major shortcoming considering that experimental development projects like WATCH must strive to be highly self critical. This issue was raised from time to time but proved incredibly stubborn. This could partly be due to the

cultural backgrounds of the project staff as in many central Indonesian cultures it is considered impolite to criticise. This cultural characteristic is said to manifest in the Indonesian education system in the unwillingness of teachers to help students develop analytical skills as questioning teachers can be seen as an attack on their knowledge. This is only one of many possibilities that could explain why it was that there was not enough critical analysis in the reports

At times project staff were too quick to draw conclusions from data. For instance, in WATCH I staff concluded that communities with better gender relations enjoy better women and children's health. This conclusion was drawn from data that could only be interpreted as showing a relationship of correlation (ie. a change in X corresponds with a change in Y) and not of causation (ie. X is caused by Y). Moreover this conclusion ignored or did not consider disparate data. If a comparison was made between Dani and Ngalum groups the opposite appears. That is, although Ngalum people have more equitable gender relations they suffer poorer overall health possibly due to their harsh environment. It is perhaps not a coincidence that misinterpretations usually support the project's methodology. The lesson here is that simple analysis of project data must be avoided as data collected by the project team can only indicate a correlation and not causation.

7. PROJECT MANAGEMENT SYSTEM

7.1 DOCUMENTATION

- To ensure that the project is adequately documented.

7.1.1 PROJECT REPORTING AND PLANNING DOCUMENTS

Project planning documents included Design Documents and Project Implementation Documents for each phase of the project and annual activity plans for each project year. Most of the annual plans also included a review of the activities and lessons learned in the preceding year.

The project produced a wide variety of reports and documents that recorded the project's activities. These included planning documents, routine progress reports, special reports, training materials (see section 2.1) and other general publications such as journal articles and conference papers. During the latter phases of the project documenting the project came to be viewed very seriously.

Special Reports

A variety of other reports were also prepared by WATCH personnel, field officers and cadres or by other groups and individuals working closely with WATCH. Such reports covered most major activities or out-of-the-ordinary events which WATCH personnel were involved with. These included reports for inter-village and inter-island cadre exposure trips as well as for trips undertaken by project

staff, reports prepared by consultants to the project, reports on major workshops and seminars, reports on specific training activities, reports on research and trials (eg. Naniek Kasniyah's and Niko Lokobal ethnographic reports, mushroom trials, bed nets trials, supplementary feeding trials) and annual survey reports including the combined baseline and mid-term survey reports in WATCH III.

Routine Progress Reports

Throughout the entire project WATCH personnel were required to prepare and submit regular progress reports. During WATCH I these reports were to be submitted on a monthly basis. In recognition of the fact that the monthly reporting regime in WATCH I was too demanding on staff and detracted too much energy from other project activities, in WATCH II the frequency of progress reports was dropped back to once every three months. However, the three monthly reporting regime also proved inadequate as the gap between each report led to imprecise reporting. It was common for staff to omit details of activities that had occurred two or three months in the past. Consequently, in WATCH III a bi-monthly reporting regime was instituted. This subsequently proved to be the most appropriate reporting regime for the project. *It seems that at least for projects where communication difficulties and limited human resources are major constraints, a bi-monthly reporting regime is optimal. However, options for a quarterly reporting regime may be appropriate in some circumstances. Monthly reports are probably inappropriate except for in projects with ample resources.*

The reports were prepared by the PM with input from other WATCH Staff and in consultation with the Counterpart Project Manager. The reports were first submitted to the Project Director (WVA) and then the Branch Office Manager for WVII in Jayapura. Once the reports had been checked and occasionally revised or altered at the request of the Project Director, they were submitted to the Ministry of Health in Jakarta, AusAID's Indonesia Desk Officer in Canberra and the AusAID Office in Jakarta.

Throughout the course of the project there were ongoing problems regarding the quality and scope of the reports. During the WATCH I phase reporting was particularly poor. To be fair to the PM and Counterpart PM this was due mostly to two factors. Firstly, as the reports were structured in tabular form the PM was encouraged to reduce his comments to a size that fitted into the appropriate boxes. Thus, direct statements about the project's progress rarely exceeded two short sentences. When tabular reporting forms were abandoned in the place of reports that allowed for greater narrative content (in WATCH II) the quality of the reports improved. Secondly, the monthly reporting regime in WATCH I was too demanding on staff, who were still trying to find their feet in a new region and rapidly establish a multi-sectoral project.

A further problem arose because staff had to translate the reports into English. Not only did the need to translate reports entail extra work for the staff but there were also problems with the translations itself which could make the content of the reports unclear. Although several project staff

were reasonably fluent in English, translation problems continued throughout the project. These problems were heightened during WATCH II and III when the level of detail and overall length of reports increased and also because several of the best English speakers left the project. Based on our experience as the translators for several reports in WATCH III we can assume that the requirements for the staff to translate documents resulted in sparser, shorter documents. The documents we translated were longer and more detailed than others that the staff had translated and this was most likely because the staff knew they could afford to write more as they wouldn't have to translate it later.

Although there were thousands of pages of documentation produced this work was often fragmented, disjointed and lacking analysis. This was a major problem because adequate documentation is crucial for the analysis of the overall impact of the project on the bureaucratic level and in the field and to improve future planning activities. In circumstances where project interventions are complex and where numerous variables are likely to impact upon project outcomes, detailed narrative reporting is necessary both to contextualise the interventions and to provide qualitative information which can subsequently be analysed and interpreted.

It was previously stated that it is possible that the lack of critical content in the WATCH documents could be due to criticism being considered impolite in the areas where the many of the WATCH staff are from. It is also likely that this is due to the staff's lack of time and training as well as for report forms that were not formatted to incorporate detailed comments or analysis. In order to encourage detailed narrative reporting donors such as AusAID could experiment with other reporting methods such as deviant case reporting²⁷ and they could more clearly emphasise that criticism is a part of the reporting requirements. Extra training in report preparation and qualitative data analysis could also be offered to project staff. In addition, employing an expat in the Monev team could lead to the creation of information that is more appropriate to the needs of donors (because they share many of the donor's understandings) and also help to overcome translation-related problems. Indeed this was attempted in the later phases of WATCH and also in the Alor Community Based Health Project.

7.1.2 WATCH III – DOCUMENTATION FRAMEWORK

As one of the main objectives of the third phase was to “develop a documentation framework to ensure that adequate documentary evidence of the project’s activities is available after completion of the project” two documentation consultancies were planned for WATCH III. The first consultancy, with Mr. Suriadi Gunawan²⁸, developed an appropriate framework for the final documentation of

²⁷ The type of deviant case reporting system described in Davies (1995) is an example of an alternative reporting system which might be modified for use in both project reporting and qualitative data generation in a project such as WATCH.

²⁸ Mr. Suriadi Gunawan was an excellent choice for a consultant as he had almost 40 years working in public health programs in Indonesia including 17 years working for the Health Services in Jayapura and Jayawijaya

WATCH activities to “identify the core issues for identification of a model of primary health care and develop a framework for setting out the information available within the project so as to present a concise representation of this model”. After two weeks in Jayapura and Wamena, in late July to early August 1999, he produced a document that was subsequently reviewed and revised by the Project Manager, Project Director, AusAID and the PCC.

The second consultancy was to collect and write up the relevant materials in line with the revised documentation framework and was planned to be of three to four months duration. One of the authors of this report (Ms. Sarah Hewat) was to be employed for this consultancy. However, in light of the worsening political crisis in Irian Jaya and the cool relations between the governments of Australia and Indonesia it proved difficult to obtain the diplomatic visas required for expatriates working on a bilateral project. As partial fulfilment of the documentation framework requirements this document was produced.

After the evacuation of Project Staff in early October 2000 several staff members were able to return to Wamena and remove all project files. At the time this report was being written, key project staff, including the PM, GAD Coordinator and the Project Director were continuing the task of writing up several other documents to complete the full documentation of the project.

Future projects should pay attention to reporting and documentation from the outset as their materials could subsequently become important. In the case of WATCH poor reporting during the initial stages led to difficulties trying to draw together materials 8 or 9 years later when concerns about documentation became paramount.

7.2 LOGISTICAL SUPPORT

- To maintain efficient logistical support for project activities

The logistical and communications challenges faced by staff of the WATCH project can barely be overemphasised. As the introduction lists many of the constraints that WATCH faced, here we will highlight a selection of some logistical obstacles:

Districts as well as the Irian Jaya DOH. He had also been involved in many consultancies on public health issues in Indonesia.

- As the telephone system was poor, contact between the WVA office and the WATCH office was limited and the two often had to communicate through the WVII Branch Office in Jayapura where international connections were more reliable. There was a slight improvement in the later stages of WATCH II when Telekom installed a new satellite receiver in Wamena.
- WATCH was able to link into the MAF e-mail post office that was established in Wamena in 1996. However the limitations of the telephone system meant that even at the end of the project the e-mail connection was poor and staff had to be highly selective in what attachments they sent on e-mail to avoid clogging the system.
- The road transportation network in Jayawijaya is extremely limited and only reaches a few areas around the Grand Valley and North Baliem areas. During the course of the project the road network was continually reworked and extended. Most notably the Trans-Irian Road, which aims to link Wamena with Jayapura, was made passable to 4WD vehicles as far as Landikma and Elilim beyond Pass Valley. At the very end of the project, in early 2000, the Kelila-Bokondini road was also extended to Karubaga and Kutime in Kanggime subdistrict. These and other road works partially helped the project to reach some of their target communities, at least when air transport was not available, but road transportation remained arduous, time consuming, dangerous and often unreliable.
- Due to limitations with vehicular access, WATCH were not provided with vehicles. Five motor scooters were purchased for the use of project staff but these were principally for transport to other offices within Wamena. The project also had two motor bikes, which could be used to visit those groups closer to roads. When they needed to travel to certain villages for visits or to transport materials they relied on commercial charter vehicles. At times a 4WD ambulance could also be loaned from the DHO.
- Another major logistical problem facing the project was the nature of the transportation system servicing the Star Mountains subdistricts (Ok Sibil, Ok Bibab and Kiwirok). These three areas are only accessible by light aircraft and almost all of the planes to this area fly via Jayapura rather than Wamena²⁹. For WATCH this raised a number of problems; flights were expensive, dangerous, inconvenient and one could often get stranded by bad weather (particularly in Kurima subdistrict). At one stage a vaccines refrigerator for Borne had to sit in Jayapura for months (in Bethesda's office) while staff waited for an opportunity to load it with something else or link it to a WATCH field visit.

²⁹ This is partly due to the fact that flights from Wamena would be more dangerous as they would involve flying about 300 km along the mountain ranges, but also partly because the Catholic aviation service (AMA) which is the main service provider in the Star Mountains subdistricts does not service any remote airstrips in western Jayawijaya.

- The project design did not sufficiently budget for administration costs and so an additional \$9000 was allocated to this area in 1993. This was partly due to the fact that in the first year the project had to increase computer equipment as there was too much demand placed on the one computer in the office. Future projects should ensure that office equipment initially purchased has a good warranty on it so that funds to fix equipment doesn't need to be found at a later stage. WATCH discovered this when a computer broke down that did not have a warranty.

7.3 LINKAGES WITH GOVERNMENT BODIES, NGOS AND MISSIONS

Developing linkages between the many diverse organisations, groups and individuals with an interest in health, gender and community development in Jayawijaya was perhaps the most significant achievement of the project³⁰. Moreover, project staff sought to facilitate more permanent linkages between these groups and organisations. The role of the project as a bridge between government departments, NGOs, missions and communities is probably the main factor differentiating WATCH from other projects in Jayawijaya.

The project itself really was a test in cross-cultural mediation. Not only did it have to work with over 30 different ethno-linguistic groups it also had to understand and attempt to modify the bureaucratic culture in the government offices, the local NGO community and the often guarded culture of the missions. This was no easy task for when the project began most of these groups and organisations rarely cooperated and there was even a degree of suspicion between them. The project's formal links with the government, in some respects, made it harder to develop linkages with some NGOs, missions and communities who viewed agencies of the GOI with suspicion. By achieving broad credibility, the project raised the profile of the government agencies. After the project began, government officers started visiting the field and taking an interest in local communities much more often. *Linkages should be a prominent feature of the final PHC model designed to represent the Jayawijaya WATCH approach.*

7.3.1 ORGANISE LINKAGES WITH THE GOVERNMENT BODIES, NGOS, MISSIONS AND OTHER ORGANISATIONS AT THE NATIONAL, PROVINCIAL, DISTRICT, SUBDISTRICT AND VILLAGE LEVELS.

In WATCH I there was no formal program directly relating to the development of linkages. In WATCH II and III the development of linkages with local government and NGOs was formalised as a sub-program under the management section of the project. However, there were very few activities

³⁰ The main government organisations, NGOs and mission groups with which WATCH made linkages with are described section I / 5.

throughout WATCH II and III that were formally considered part of this sub-program as most linkage building activities occurred as elements of the other programs within the project. The main point of creating this sub-program was therefore to accentuate the importance of linkages and to encourage project staff to ensure that more attention was paid to the development of linkages in the course of implementing other activities.

The development of linkages was achieved through a wide variety of approaches and activities, most of which have been listed elsewhere. Some of these include:

- Formal linkages were developed at the national provincial and district level through the establishment of Project Advisory Board (PAB) and the area coordinating committee (ACC) which are described in 7.1.2 and 7.1.3;
- The inter-village visits and inter-island cadre exposure and training visits provided opportunities for the development of linkages between indigenous communities in Jayawijaya and also with individuals and organisations in Java;
- The inter-island staff visitation programs provided an opportunity for project and health department staff to develop linkages with other projects or organisations across Indonesia;
- Joint activities with the government, such as incorporating WATCH in-service training with the regular meetings of doctors and midwives and assisting with the government's midwifery conference in Jayapura;
- Inviting other organisations to hold joint meetings, attend the meetings of WATCH groups, or assist with WATCH sponsored workshops;
- Joint activities with other NGOs and missions, such as working with YKB in WATCH I on the DIKSWA training materials;
- Collaborating with other organisations such as UNCEN, UGM, LIPI, BPPT, etc. on conducting research and producing joint publications;
- Organising consultancies particularly from organisations within Indonesia. For instance the consultancy for the WATCH I review developed links with UGM which were subsequently used for developing the computer program;

- The relief effort during the 1997-1998 ENSO related drought also provided an unexpected opportunity for developing linkages with missionaries, BAPPEDA, MERLIN, MSF etc.

Above all else, the project's success in developing strong linkages was due to the open and communicative approach of WATCH staff. This point should remind the reader that organisations are made up of individuals. As linkages are made by people, the loss of staff in organisations can result in the loss of contacts. This was exemplified around 1995 when a breakdown in the formerly close relationship with YKB occurred due to changes in their management team. In 1999 the strong links WATCH had developed with the former DHS head, Dr. Zulfian Muslim, were lost overnight when he left and were not quickly replaced with the new head of the DHS. This led to coordination problems between WATCH and the DHS that had not been evident since the very earlier stages of the project.

Project staff were aware of the principle that people can come to rely on certain people in organisations when, in WATCH II, they established the foster parent system. Having more staff involved in the supervision of group activities prevented community members from having to over rely on a few staff members. *Future multi-sectoral projects, if they only have less than a few staff per sector, should attempt to ensure that linkages are maintained through more than one individual otherwise if that person leaves the project linkages may also be lost.*

Strong linkages were undermined by conflicts between WATCH and other government bodies and NGOs. Most notably, there was conflict between the participatory approaches of WATCH and the more traditional top-down approaches to development used by the DHO. This led to several problems such as in the case of the greening activities in Manda. Here the governments' project-oriented approach led to community members being paid to plant trees which undermined WATCH's desire for the community to plant trees for an intrinsic reward. Other government programs such as the IDT and Social Safety Net also undermined WATCH's approach as these funds flowed directly into the village with little supervision on how they were spent with few penalties if the funds were 'mis-spent' on items like food instead of community development activities. As these programs were generated at the national level, WATCH could not directly change these programs. Yet in some cases where the *Kepala Desa* was effective and other community members were open minded WATCH were able to help the community to make better use of the IDT and Social Safety Net Funding. For example, in Iwur some of the bridge making and airstrip construction was partly funded by IDT money. There were also many other groups that purchased materials for agricultural, animal husbandry and appropriate technology activities using IDT money.

During WATCH III a potential conflict arose between WATCH activities and those of their own implementing agency. On the advice in the reviewer of WATCH II, this phase of the project focused on implementing activities in Kanggime and Kembu-Mamit even though many of the project staff felt this was not the optimal target area, in part because it was already covered by WVII's Area

Development Program (ADP). Whilst this did cause some considerable headaches for project staff, especially as they had to make sure that groups were not registered with both projects, most potential problems from overlapping programs were pre-empted through working closely with the WVII ADP managers and field staff to develop a coordinated and complimentary approach.

Linkages with activities in Papua New Guinea was one area in which the project was not strong. From very early in the project it was acknowledged that much could be learnt about PHC in the New Guinea Highlands from programs and projects which had been or currently were being implemented in PNG. However, at no point in the project did any staff travel to PNG to visit and develop linkages with organisations. Indeed the only activity in this area was bringing a midwife, Sister Mamba Katur, from the Wantoat WATCH Project in PNG. WATCH's shortcomings in this regard is understandable given the GOI's restrictive attitudes and policies towards travel, cultural exchange and technical assistance between Irian Jaya and Papua New Guinea. In light of this, it was actually quite a coup for WATCH even to be able to go so far as bringing Sister Mamba Katur to Wamena and Jayapura to participate in an official DOH training activity (see pp. 1.4 for more discussion on this issue). *By encouraging project personnel to learn from examples from PNG does not imply that PNG is implementing better development programs. Indeed, there are many aspects of development in Irian Jaya that may be regarded as more appropriate development than the approaches developed in PNG. Lessons can be just as easily be learned from mistakes and as such visits to PNG may be more about learning about things which have failed as about successes. This point should be made clearer to people in the GOI so they might take a more open approach to exchanges between Irian and PNG. Furthermore, just as the exposure and training trips to Java were considered to help in dispelling misconceptions about how people lived in Java, so too could visits to PNG perhaps help in dispelling the Irianese myth of PNG as the Promised Land.*

7.3.2 PAB – PROJECT ADVISORY BOARD / PCC – PROJECT COORDINATING COMMITTEE

At the beginning of WATCH I a Project Advisory Board (PAB) was established under the auspices of the project Memorandum of Understanding. Paragraphs 5 and 6 of the MOU laid out the membership and functions of this body, which had responsibility for the development and direction of the project. The functions of the PAB included coordinating policy, funding and operations for the project, reviewing and reporting on WATCH's progress to the Government's of Indonesia and Australia, and the provision of recommendations to the two governments regarding proposed changes in either the project design or budget.

As well as including the Project Director of WVA, the project and Counterpart Project Manager, the associate director of WVII, and the branch office manager of WVII in Irian Jaya members of the PAB included representatives from a range of sectors. The Directorate General of Community Health acted as a Chairperson and those who attended include representatives from the Irian Jaya Provincial Department of Health, from the Social and Health Departments and/or the Cabinet

Secretariat in Jakarta, from the Provincial Development Planning Body (BAPPEDA) and Provincial Health Office (PHO), from AusAID in Jakarta and nominated consultants and other officials as determined by GOI and the GOA.

In WATCH II this body came to be known as the Project Coordination Board (PCB) and in WATCH III it became the Project Coordinating Committee (PCC). However, throughout the course of the entire project its form and function remained essentially the same. Throughout the project the PAB attempted to meet every six months. At first it was decided that the PAB meetings should be held alternately in Jakarta and Wamena. The decision to hold alternate meetings Wamena gave board members the opportunity to experience first hand the conditions under which the project was operating. However, it proved logistically difficult to transport all of the board members to such a remote location and it was also difficult to arrange a time that was mutually suitable for all board members to travel to Wamena. Consequently, only a few PAB meetings were ever conducted outside of Jakarta in Wamena and Jayapura. From the end of WATCH II the WATCH PCC was combined with that of the ACBHP and a number of PCC meetings were subsequently held in Alor, NTT Province. The Project Manager was required to submit a summary progress report to each of these PAB/PCB/PCC meetings.

7.3.3 AREA COORDINATING COMMITTEE - ACC

In the design document for WATCH I an Area or Kabupaten Coordinating Committee (ACC) was to be established to facilitate linkages and avoid programmatic conflicts with other government and non-government bodies in operating in Jayawijaya. Whilst such a committee was established early in WATCH I it never really functioned effectively and by the end of the phase it had ceased to function at all. In WATCH II the ACC was reformed and revitalised. WATCH was designed so that this committee had no power to direct the project for its principal function was coordination of the various sectors.

There was a major and unintended advantage to these meetings for they acted as a pseudo Government and NGO forum. This was beneficial because there is a high degree of suspicion and lack of cooperation between government departments and NGOs as well as between the NGOs themselves. Various attempts have been made to establish NGO forums but all have failed for reasons such as the 'clash of egos', no clear agenda as to what was to be achieved by such forums etc. By setting up the ACC WATCH effectively created a situation in which dialogue occurred albeit dialogue which was about the WATCH project. Thus the ACC provided a purpose for various bodies to meet and communicate but in context that was non-threatening.

7.4 FINANCIAL MANAGEMENT

In comparison to most AusAID funded project with commercial companies the project budget was small, around AUD\$500,000 P/A. In the first year the project received a 12-month tranche of funding. As this was found to be too large to manage, in subsequent years, project funding was made in six monthly tranches to WVA. As well as preparing and submit regular acquittals the project had to develop and maintain transparent project budgeting and accounting systems. Acquittals were returned to WVA who were required to submit an annual (in WATCH I) and a biannual (in WATCH II and III) acquittal to AusAID Canberra.

While financial management is a relatively minor topic for the purposes of this report it can be noted that the financial reporting procedure changed after the first stage of the project. The expectation to provide annual acquittals was changed so that in WATCH II and III biyearly acquittals were expected. This was because a year was too long a period of time to have to account for as well as because the funds were not able to be spent quickly enough and interest was accumulated from funds sitting in the bank.

One of the strengths of the 'bilateral project come semi-NGO' structure of WATCH (as opposed to operating directly through government structures) is the budgetary flexibility. Pioneering activities like providing PHC in the highlands of Irian Jaya need flexible budgeting arrangements in order for new ideas to be adopted without excessive administration. An example of project activities quickly altering to address community issues was when there was a request at the provincial level for WATCH staff to help train midwives and nurses. At this time funding was quickly allocated to this activity even though it had not been planned for. Similarly, when the SPK wanted WATCH to help implement the altered curriculum, WATCH were able to find funds for this.