JAYAWIJAYA WATCH PROJECT
EXTENSION

PROGRESS REPORT
Dec 1991 - April 1995

MINISTRY OF HEALTH, REPUBLIC OF INDONESIA
AND
WORLD VISION INTERNATIONAL INDONESIA

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EXECUTIVE SUMMARY

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I. INTRODUCTION

Jayawijaya district is in the Central Highlands of Irian Jaya province (New Guinea island). The area is as large as 52.916 km^2. Geographically, it is a rugged mountainous area. The altitude varies from 100 m up to 4750 m (with the average altitude is around 1600 m above sea level).

The climate is mostly subtropical with the temperature range from 12^o C - 29^o C. The mean rainfall per month is 190 mm with an average 15 rain days. The relative humidity is 75%.

The population in 1991 was 390.839 with proportion of women 48%. The population density was 7.4 person/km^2. This appears to be a low population density but is in fact a high density in relation to its nutritional sustainability.

The population growth rate data from District Bureau of Statistics was not reliable. But, data from some health centers yielded results which were quite low compared with the national data. The population growth rate from Tiom Health Center produced a figure of 1.89 %, which was lower than the national figure. The total number of alive children is 1.4 children per woman which means that this number is very low when compared with developed country's figure such as the UK that has a total fertility rate of 1.8 children per woman. All of these data meant that the population was not growing but shrinking in some places in the highlands.

The staple food is sweet potato. Greens are part of their daily diet. Meat is rarely consumed, only on special occasion. Pigs are raised for the strategic value. The economy is still subsistence based. A cash-crop economy has begun in some parts of the highlands, based on coffee, garlic and some vegetables. Marketing is difficult.

A road connecting the capital of province and the district is being constructed. Roads in the district mainly connect with two subdistricts. The air transportation from capital of province to the district is run by government and private air companies using Fokker 27 and Twin Otter. There are about 2-10 flights to Wamena daily. To other subdistricts, most of the transport depends on church-based air aviation (MAF and AMA) which are primarily for supporting the churches' works in the hinterlands.

The community in the highlands consists of three main big tribes (Dani, Yali and Ngalum). And from these tribes, several sub tribes exist. Informal leaders (tribal chiefs) still exist, but sometimes conflict with the formal leaders (such as the villages chiefs). There are growing new leaders among churches leaders who are very important in reaching the community.

Women still live in subordination in the community. They still have difficulty in many ways of life in the highlands. Literacy rate is very low, with women the most deprived group from the education. There are only six senior high schools serving the whole district area. Scarcity of qualified teachers is common.

PRIMARY HEALTH CARE IN JAYAWIJAYA

Health services began with the arrival of missionaries to the Jayawijaya highlands around 1954-8. They consisted of some basic curative cares such as eradication of yaws, treatment of basic surgery ***1***.

After establishing the churches and the coming of Indonesian government, the health services began other health activities such as basic sanitation (pit latrines, water supply) and Mother and Child services. Communities health workers were trained.

Around 1980 a concept of Primary Health Care (PHC) introduced. Health center was built in each subdistrict. There are 15 health centers covering 13 subdistricts. All of the health centers are run by doctors. Usually in each health center there are 2-6 sub health centers, 2-30 health posts and 6-100 integrated posts.

The capacity of health centers to cover the subdistricts area is still very poor as most of the subdistricts have area as large as a province in other places of Indonesia. For example, Tiom Health Center covers an area much larger than Bali province with only one doctor in Tiom. The problem of coverage is enhanced by lack of quality nurses and midwives for serving the community at the level of sub health centers.

The drug supply was distributed by district health office through airplane. Scarcity of common medicine is overcome by enhancing the village drug fund scheme. Community involvement is good in many parts of Jayawijaya.

Integrated posts (Posyandu) that integrate the services of Mother and Children (Family Planning, Growth Monitoring, Immunization, Nutrition Education and Treatment of simple endemic diseases) began their activities. They are the main activities and are conducted in many hamlets all over the highlands. About 60.27 % of under fives children have growth charts, with only 43.50% involved in the growth monitoring activity which run every monthly in the integrated post.

PROBLEM OF PRIMARY HEALTH CARE IN JAYAWIJAYA

A strong selective Primary Health Care (PHC) [Community Health Workers at all villages, nutrition rehabilitation center, village health fund] approach was conducted for more than two decades in Tiom. There was a reduction in Infant Mortality Rate (IMR) from around 250/1000 (1960-70) to around 90/1000 of live births (1990). Pneumonia, malaria and diarrhoea contributed to 70-80% of the death in under fives.

Besides the improvement in the IMR, we saw the increase of malnutrition rate among women and their children. In Tiom 1975, around 40% of the women and their children were malnourished, but

at 1990, 80% and 60% and in 1994 86.7% and 57% of the women and of the children malnourished. There are many reasons to explain these phenomena.

In the past, weak children would die. Only the strongest children lived (this sometimes led to the practice of choosing only one child [mostly boy] from twins to save the other child [2]. Without this "cruel" activity, both of the children would die). The selective PHC approach meant we could save children who would have died and this means we saved the children who were not fit for the environment and created more mouths to be fed.

As population increased, men opened more gardens but the gardens were moved further out of the villages and it was women who worked and walked longer hours. Women's work load increased and affected the health of women. As land suitable for cultivation decreased, people used the high slope of hill and caused high erosion rates. Soil became infertile, food products decreased. The ultimate result was the deterioration of quality of life for women and children [3].

THE ROOT CAUSES OF ILL-HEALTH IN JAYAWIJAYA DISTRICT

As the selective PHC did not contribute to a betterment of quality of life in Jayawijaya district, we understood that we dealt with the symptoms of ill-health, but not with the root causes of the ill-health.

The communities in Jayawijaya Highlands have a very clear sexual division of labor between men and women. The description of each gender role could be seen in table I.

Most of the tribes in Jayawijaya highlands have a similar pattern of sexual division by labour. Only in Ngalum tribes, we see a little differences such as men and women work together in the gardens, caring the animals and nurturing the children.

Although men have roles in decision-making, the work-load is quite similar to the women's work-load. Men work with their stone axes, without any modern equipments and keep awake for their kin's safety. Women work hard also.

Times change. New religions and government came. Contact of new and traditional values happened and caused changes. New religions offer new beliefs, so the old religious ceremonies abandoned. Government arranged political situation, and no wars permitted again (including no negotiations, no security guards etc). Besides that, they were introduced to clothes, salts, cooking oils, spade, iron axes and saws.

These changes make men lost many of their roles and their loads and women have more roles and loads (such as working harder to produce more crops for selling in the market). In the past, children

help women in the gardens, but now most of the children go to school. Besides that, as polygamy is not allowed, women have no helpers for tending the gardens.

As the result of several changes in the environmental factors, an imbalance in gender relationship happens. Men have been helped with their work load, but they lost their important roles. Men are in a situation called "ennui". They confuse, do not know how to fill the emptiness. They face an identity crisis [4,5]. To take a new role they need to have other new skills and capabilities. To help some of women' roles still is hampered by their old culture.

The women themselves are difficult to give some of their roles to men as in their beliefs women should work. Women who do not work are 'dead' women, not precious. Besides that, in their marriage system, women are bought for five - ten pigs. Therefore, women should work hard.

At this moment, the gender relationship in Jayawijaya could be seen in table II. In these three major tribes, we could see a similar pattern with triple roles of women (reproductive, productive and social) and men's dominance on decision making and community life roles [4,6].

Although men help women in the reproductive role such as caring the children, but their role is little. Men only involve in 5% of the load. Women's time mostly focus on routine daily works. Women's working hours per day is around 16 hours. It means, since get up early in the morning till sleeping time, women work [6].

We could see that women have no time for themselves, no time for rest even in pregnancy. Besides that, pattern of food distribution inside the household does not help women to get enough food. All of these factors contribute to the ill-health of women in Jayawijaya.

The impact of gender imbalance on women's health

Data from the baseline survey confirmed that gender imbalance relates with women's ill-health, especially the nutritional status (see table III). In area where gender relationship relatively balance (such as Oksibil), the nutritional status of the women is better.

This nutrition situation is not surprising. Hyndman [7] found in his study among the Wopkaimin people (in Star Mountain near the border of PNG and Irian Jaya) that gender patterns create systematic undernutrition among adult

II. MISSION

To improve the health and the nutritional status of women and their children in the Jayawijaya district.

OBJECTIVES

1. To deliver Effective Formal Health System Services
2. To implement a Health promotion and prevention program
3. To implement a Gender Awareness and Community Development Program
4. To develop and implement a Special Training Program for Staff and Local People
5. To implement a Monitoring and Evaluation Program
6. To implement a Management Coordinating System

PERFORMANCE INDICATORS

The problem in Watch Project is lack of quantitative/qualitative data that could show if the project has reached its targets or objectives. Without these kinds of data, the project will have no proofs of its effectiveness on improving the health status of the community. At last, the project will have no power to influence the change in the health policies in Irian Jaya or even in Jayawijaya.

The ultimate target of all health projects will be the improvement of health status of the community (Infant Mortality Rate [IMR], Maternal Mortality Rate [MMR], Crude Death Rate [CDR], and Malnutrition rate). Some data are difficult to be collected such as IMR, MMR and CDR, although MMR could be tried using Sisterhood Method. The Watch Project, from its evaluation, was suggested to use the Malnutrition Rate as the ultimate target/indicator in evaluating the progress and effectiveness of the project. The indicator is easy to be collected, and very sensitive to reflect to others indicators such as mortality. Even, we understand that 60% of the direct cause of death is malnutrition. So, we will use this indicator through out the project life.

As impact indicators are quite difficult to be collected, mostly changed many years after the project life and influenced by many factors, there is a need to develop intermediate/outcome indicators that could show us the progress of the project.

Now, hundreds of indicators available in the district health information system. Unfortunately, we have not tried to select or to find the most sensitive indicators that reflect the change in health status of the community or the real intermediate variables indicator to the improvement in health status such as nutritional status. In many discussions, there were tendencies that Knowledge Attidute Practice (KAP) survey should be conducted. Or, Expanded Program of Immunisation (EPI) coverage using Cluster Sampling to be conducted.

These arguments missed an understanding of the real problems in the Watch Project. We argued on the needs of a comprehensive primary health care as we have difficulties with the "selective [primary] health care". We did not say that EPI coverage survey is not important; but, if the real problems in the communities are pneumonia, diarrhea and malaria with the predisposing factor is

malnutrition, those activities will not hit the problems. All the indicators of the Watch Project should reflect the interlinkage of several factors lead to the problem of malnutrition and infection.

Gender is the root causes of ill-health among women and their children in Jayawijaya district. Indicators reflect on the situation of gender have been produced by the help of Community Development (CD)-Gender And Development (GAD) consultant. Besides that, we still seek a refinement of the indicators from an Adult Education Specialist before we begin to implement the GAD program more intensely.

Besides the gender indicators, several nutritional indicators should be developed. Improvement in energy density of the food, the viscosity and the frequency of feeding of children 6-24 months will be very important to be monitored. These indicators are proxy indicators to the indicator of energy intake in the children 1-4 years old [the intermediate variables to the improvement of nutrition status among women and their children].

The impact indicators of the nutritional status are the nutritional status of women and their children. The indicators of the nutritional status among women are:

1. % weight/height ^{2} (Body Mass Index [BMI]) in pregnant and non-pregnant women < 20
2. % prepregnancy weight of women (in Jayawijaya, we will use the data of women with underfives around 2-3 years who are not pregnant - the birth interval in Jayawijaya 4-5 years) < 40 kg
3. % Mid-Upper Arm Circumference (MUAC) < 23.5 cm, < 18 cm

The indicators of the nutritional status among children are:

1. % Means of Z score of Weight-for-Age (WAZ), Height-for-Age(HAZ) and Weight-for-Height (WHZ) in children 1-4 years old < -2, < -3

The indicators reflecting the rate of infection (malaria, diarrhea and pneumonia) should be collected (including the burden of diseases - diseases specific death rate, community involvement in handling the diseases - availability of bed nets, cereal-based oral rehydration solution, healthy smokeless stove/house, Ventilated Improved Pit [VIP] latrines)

1. a. % and location of health posts with flow charts for Pneumonia, Malnutrition, Diarrhea, Obstructed labour and Post Partum Hemorrhage
   b. % and location of health posts that use protocol correctly
2. % households with sweet potato flour
3. % Traditional Birth Attendants (TBAs) report their activities, report birth weight correctly, % TBAs use the protocols Obstructed Labor and Post Partum Hemorrhage properly
4. % households use Pyrethrum Impregnated Bed nets
5. % households with Hygienic Latrines
6. % groups with Safe Water Supply

7. % late referral for 4 commonest diseases
8. Impact indicator:
    a. % mortality caused by Pneumonia, diarrhea, Malaria, Malnutrition
    b. % morbidity caused by Pneumonia, diarrhea, Malaria, Malnutrition

STRATEGIES

1. To deliver Effective Formal Health System Services

Improvements in nutrition and health conditions will be strongly influenced by progress in overcoming the many other manifestations of poverty. But rely on social and economic progress alone is not necessarily the best strategy. So, the conventional development programs could be supplemented by many other ways of meeting the needs of the poor, such as direct intervention efforts to deal with nutrition, health [8].

The direct intervention approach deals with the 3 commonest diseases (Pneumonia, Diarrhea, Malaria) and the underlying factor (Malnutrition) in children and two biggest problems in women (obstructed labor and postpartum hemorrhage). To improve the quality of health workers, we developed several protocols. To monitor the use and effectiveness of the protocols is one of the most important work for the project.

List of activities:

1.1 Monitoring of case management protocols
1.2 Development of integrated case management protocol
1.3 Development a malnutrition case management protocol
1.4 Continue the development of a suitable food supplement
1.5 Promote and evaluate sweet potato as a super oralyte
1.6 Develop and implement a nutrition education program
1.7 Monitoring the implementation of TBA training
1.8 Develop and implement effective case management protocols for high risk pregnancies

2. To implement a Health promotion and prevention program

These activities are conducted to improve the knowledge and skills of the community to access the health services and to help themselves on health issues. The meeting of demands (community) and services (from health sector) will improve the health and nutrition status of the community.

List of activities:

2.1 Implement a community health education program
2.2 Implement a malaria eradication and prevention program

2.3 Promote and assist in supplying the use of safe water supplies
2.4 Promote and assist in supplying the use of latrines

3. To implement a Gender Awareness and Community Development Program

To solve the health problem of women in Jayawijaya, the gender approach is very important. In this gender approach, the gender relationship between women and men is rebalanced. The targets of the approach are not only the women, but also men as men in Jayawijaya also lost their roles [5,6].

The basis of this approach will be the community groups. In the community groups, four basic interventions were conducted. The interventions for improving the demand on health by the community are: Poverty alleviation through income generating activities, gender awareness approach to improve the gender situation, health promotion activities (such as health insurance fund, village drug post, delivery hut and integrated post) and improving the knowledge and skills of the community on health.

The activities are conducted in stages, continuity, and groups. Communities participate fully in decision-making [4]. In the Dani life, good life could only be reached by hard-working. They regards working together as a very important matter. Working is an expression of their self-prides, as a consequence of life, as an opportunity for showing the capability and as the place for building togetherness.

Income is very important. Advances in income has allowed households almost everywhere to improve their health. Increasing the income of those in poverty is the most efficacious for improving health [8].

There are high expectations among the communities for many things. "Modernization" has taught the people to carry these expectations. The disparity between expectation and realisation of income of the community is worsening.

Although income is very important, we realize also that gender relationship is the crucial point in the community. There is evidence that the food and cash that women generate themselves are more likely to remain in their own control. In addition, many studies have shown that women put higher priority on their families' basic needs than men do. Therefore, it can be assumed that the more control women have over household food and cash, the more potential there is for satisfying not only the nutritional needs of their children but also their own needs.

On the negative side, greater participation in food production and income generation may increase women's work load to extent that time and energy available for other necessary activities, both within and outside the food-related field, will not be sufficient to secure the basic needs of their family or themselves. In addition, the physical labor involved may in itself be so heavy that it is detrimental to the women's health [3]. It is known that women's energy expenditure over a week's period was higher than men [9].

To avoid this negative side, men are encouraged to take some of women's work load and use the new roles as the way for gaining recognition from the people. Income generation activities become the jobs of men. It is understandable that gender approach is working with both women and men.

In the past, dealing with the health problems began with health activities such integrated Post (integration of Maternal and Child Health activities and Family Planning only), Health Posts etc. With this approach, self-reliant community could not be achieved and the attrition rate of the cadres from the health activities is high.

With the gender approach, health is not the first priority but just as the consequence of the community development. It begins with community development activities (such as income generating and gender awareness program), then when the time has come, the communities demand health activities for their communities.

As health is the result of the community development, people could arrange the financial support for their health activities such as health insurance fund, village drug post. A self-reliant community could happen with this approach.

The cadres, who are supposed to be volunteers, are involved in the income-generating activities. The attrition rate could be decreased as the cadres have a stable income sources. This will give benefits to all people in the community.

The development of community groups is very important. With existing groups, gender awareness approach could be conducted within the groups. The gender approach uses a consciousness-arising participatory approach based on adult education method of Paulo Freire ***10,11,12***.

When conducting the baseline study of the Jayawijaya community, the communities' codes (symbols of the most important events/cultural/emotional things) were collected. Based on those codes, modules consisting the codes in pictures of consciousness-arising on gender issues were developed.

Within the groups, the module are used. They will expose to some pictures quite similar to their daily life situations. They will be asked of about what the pictures are, is that happened in this community, how to solve the problem depicts in the picture etc. With this method of education, the communities decide, adapt and develop their cultural and social value for their benefit.

Based on the findings from the community discussions on the module, other activities conducted. Based on the codes of problem of women (most of the codes are about gender issues), people begins to realize that women's work load is high. To improve the situation, the communities ask for a better agricultural method.

Based on the demanding groups, a Low External Input and Sustainable Agricultural (LEISA) activity is implemented. In this LEISA, terracing along the contour introduced (for preventing erosion).

Men and women work together to plant reforestation, nitrogen fixing trees along the contour. As reforestation dooms to a failure, besides reforestation trees, fruit trees are introduced.

People could prune the reforestation trees as high as 1.5 m. The leaves from the cuttings are used for fertilizer and mulching and the sticks for firewood. The pruning has the regulation. It is only allowed for the trees on the foothill, not on the peak of the hill. The trees on the top of the hill will work as the buffer zone for preventing erosions, keeping the water inside. On this buffer zone, commodities crops such as coffee, teas are introduced. Pruning also has another purpose. Vegetables and food crops plantation need sunshine. Without pruning, the harvest will be poor.

The garden beds in fallow period, cover crops such as Mucuna pruriens are planted. This species of beans is very important for introducing fertilizer to the soil. The fallow period could be reduced up to 1 year only (from 10-20 years fallow). As people always haves fertile gardens, they do not have to open more forests, and force women to walk further away.

With LEISA, women have firewood and water [water from the conservation of forest] near to their homes, , good harvest of food crops and do not have to walk longer hours. It means that women are helped to fulfil their practical needs ***13***. But, most important, women have more time, for themselves and for involvement in the community social gatherings (that fulfil the strategic needs).

As their high work load, women's time is limited and becomes a constraint for women to participate in any activity apart from their primary tasks in household work and food-related work. In a typical oral society, being informed and having decision-making are often a matter of "being present", but women often find themselves too busy to participate in probing opinions, gathering information and forming social networks. With LEISA, women have more time for participating in these activities and help the women on fulfilling their practical and strategic needs.

Men also have a very important role with their commodities crops and gain recognition from their products. It means, men will have their self-pride and dignity again after some cultural shocks.

Besides that, income-generating activities such as animal husbandry activity could be conducted within LEISA. Integration agricultural-plantation-animal husbandry could be easily implemented within LEISA.

To improve the demand of health services, the knowledge and skills of community groups on health are improved. Ethnographic studies are conducted to understand the people's theory of illnesses, and develop the hierarchy of resort of healing techniques ***14***. The discussions on resort of healing techniques with the community are conducted. Severe diseases are encouraged to be referred to health services.

As community groups demand for a better health, the health services should accommodate the raising demand of health from the community. The supply of health services should be improved. As women have more time for themselves and for their children, they could easily have time for accessing the health services.

The health services should improve their understanding about the gender problems that hinder women to access the health services. It means, the provider should understand that women are the least likely group to access the health services and that women have a limited time.

Health services should be conducted at the time appropriate for women and at the nearest place of women's working place. It is understandable that health services working hours should be very flexible according to the community groups' time availability.

Health services provider also should understand the special women health's need. The services that could provided this need have helped women to fulfil their biological needs.

The all interventions for increasing the demand and the supply of health services could be seen in figure 3..

List of activities:

3.1 Organise the establishment of viable and sustainable community groups
3.2 Train cadres/coordinators in the gender awareness and application modules
3.3 Provide infrastructural support with bridges, tracks
3.4 Research and introduce product lines for income generation
3.5 Support the establishment of cooperatives

Figure 3.

4. To develop and implement a Special Training Program for Staff and Local People

The aims are to strengthen the ability of the community and health providers and to sustain the activities conducted by Watch Project.

List of activities:

4.1 Coordinate regular in-service training for health personnel
4.2 Conduct and supervise inter village visitation programs
4.3 Participate in AIDAB coordinated inter island visitation program
4.4 Conduct visitation and sharing/training program
4.5 Research and coordinate higher studies program for specialist staff

5. To implement a Monitoring and Evaluation Program

Approach For Collecting The Data

1. Through Watch-community groups available (180 groups all over Jayawijaya)

There is a tendency to use the groups and other groups not involve in Watch activity as the control group. But, difficulty arises as the ethical problem when we only collect data from the control group without doing anything. We still need to find ways to avoid this problem (the control groups could be the groups that will receive the revolving grants from the Watch groups).

Teams (each group consists 2 persons) for whole year around will visit the groups to collect the information. They will work together with the community change agents (we have 12 community change agents). At the same time, these data collectors will evaluate the work of the community change agents.

The system, the data to be collected, the forms and the interval will be developed at least before March 1995.

This system will prove the effectiveness of the project.

2. Through health centers

The existing system is on fire by many parties (too many forms and too many data available unused). The real problem in the existing health information system is not the lack of data, but the use of the available data and to communicate to several parties.

Watch-by the help of a Health Epidemiology Specialist will finalise the health information system in the district level and highlight the must-important data to be collected and to develop an early warning system of outbreaks.

The steps will be as follow:

a. discussion with the district health management teams on the possibility to collect the data that are useful for their programs, the forms etc (in this discussion, health planner and health data specialist from provincial level will be invited).
b. discussion with health centers doctors on the possibility of developing a health information system which will support the work of the health center doctors.

These discussions will be conducted in the first week of the Epidemiologist.

On the second week, the specialist will develop the final version of data to be collected and then the head of DHO will put the final version on the DHO decree that should be followed by every parties in the District Health System.

All of these activities should finish before end of March 1995.

On health activities, collect all data on nutritional practices (% wash hands etc) and one-month training on behaviour and observe regularly the changes.

List of activities:

5.1 Monitor use of the computerised health information system
5.2 Design and conduct regular surveys of all project activities
5.3 Train 6 data collectors

6. To implement a Management Coordinating System

List of activities:

6.2 Produce regular reports
6.3 Organise linkages at the district level

III. TARGET GROUP

The project is targeted to the poorest section of the population, especially to women and their children in the unreached areas. They are based in 100 villages all over the Central Highlands of Jayawijaya district. The project is also work to increase the role of the men in the community.

IV. PROGRAM IMPLEMENTATION (OUTPUTS UNTIL APRIL 1995):

1.1 Monitoring of case management protocols

a. All health centers and private (community) clinics have received posters of flow charts for Pneumonia and Diarrhea, ARI Timer. Although we have developed a flow chart of Malaria, we will not continue the poster as it is difficult to develop a clinical guidelines to diagnose Malaria.

40 % (n=8 at April 1995) of health centers have trained the health workers to use the posters and ARI Timers (we have not received any information from other health centers - we hope the information will complete by the end of June when we conducted an In-service training).

We conducted the evaluation of the usefulness of the flowchart and ARI timers. We found that health workers (nurses) could use the chart well and the agreement between doctors and nurses are good. But, we felt that we still need to improve the flowcharts. HC developed two versions, for the health workers/cadres and the community. Besides the flowcharts, we developed Simple Health Messages (see objective 2.1) for the community. Enclosed is the newer version of flowcharts and simple health messages. We will print into posters after received reviews from the consultant of MCH (DR. Toni Sajimin).

Several NGOs health workers (mainly expatriates) and Health centers' doctors have reported the importance of ARI timers. They told us that the community awareness of the importance of counting respiration rate has increased. It meant that early diagnosis dan referral increased. They suggested that more ARI timers be distributed so that as many hamlets as possible can have one. We have followed up the suggestion by asking for more ARI timers from Depkes Pusat. Depkes Pusat has answered and they will count the reserve first before making decision on how many timers could be sent to Wamena.

We trained the churches leaders and NGOs workers on the pneumonia and diarrhea protocols and malnutrition. In our discussion with NGOs, they suggested to use the evangelists to promote the use of protocols. We will begin to train the evangelists in July 1995.

b. Evaluation of % of properly use of the protocols has not been conducted.

c. Dra. Naniek Kasniyah MA MMed Sci, a health anthropologist from UGM, came to help to conduct several ethnographic studies in February 95. The objectives of the studies were: to learn about people's perception and health beliefs of Pneumonia and

Malnutrition. A health education program based on these findings will be developed and launched to improve access to health services.
During the study, the consultant was accompanied by the GAD Coordinator and an anthropologist from University of Cendrawasih, Jayapura. The involvement of the local people has the purpose to delegate the knowledge to the locals.

The preliminary finding of the study is that the problem of health in Wamena is not culturally related. It is only lack of knowledge that made the people did not use the health services. Improving the knowledge only will improve the access of health services in Wamena. The complete report of the consultant has not received until end of April 1995 as the consultant was sick after returning from Wamena.

In May-June 1995 we (GAD Coordinator, Health Coordinator and anthropologists from Uncen) will conduct a second ethnographic study on pregnant women, infant growth patterns and early childhood sickness. The study is designed and supervised by a PhD candidate on health anthropology who is conducting a study in Wamena. This activity is enhanced the working relationship between Watch and Uncen and help to increase the knowledge on health of the community and whenwhile improving the skill of local staffs on conducting ethnographic study.

d. DR. Dr. Haripurnomo has come to Wamena and helped the Watch Project on developing Indicators for evaluating the effectiveness of Watch project intervention and District Health Information System. He has pinpointed several indicators to be used for evaluating the Watch Project activities. He mentioned the vast range of Watch project intervention which is necessary to be conducted with this kind of health situation and the difficulty of choosing the indicators. But, he succeeded to develop those indicators after discussing for 2 weeks with the Watch project staffs, the DHO staffs and other related personnels.

The consultant helped the HC to rerevise the evaluation forms of TBAs training and health workers training. The result of the revision is that the evaluation forms are much better systematically.

The complete report will be sent later. Enclosed is the draft of the indicators.

On District Health Information System, see objective 5.1

1.2 Development of integrated case management protocol

We have developed protocols for Pneumonia, Diarrhea and Malaria. The evaluator (Dr. Michael Dibley) suggested to integrated the protocols into one protocol. The use of consultant is important. We have discussed on inviting a consultant (Dr. Tony Sadjimin DSA PhD) and at this moment we are waiting for his coming (early June 95).

1.3 Development a malnutrition case management protocol

We had conducted the nutritional anthropometry baseline and we had a study result conducted by the DHO. These data will be used for developing the malnutrition case management protocol. To finalise this protocol, the consultant is needed. We still contact the consultant.

To inform the communities on malnutrition, HC have conducted a seminar of Malnutrition Problems in Jayawijaya to celebrate the Women's Indonesia Days (Hari Kartini). HC worked together with DHO. Although we stressed on the malnutrition, implicitly we are stressing the importance of gender.

The things happened during/after the seminar:

a. Increase awareness of district policy makers on malnutrition problem.
b. more sectors would like to involve on working to improve the nutrition status of the community
c. Watch becomes the secretariat office on combating malnutrition in the Jayawijaya district. Sectors will work together in Korupun and Ninia/Silimo (integrated supervision).
d. PKK has taken the initiative to promote/campaign on 3 month-delivery leave.

The complete report is enclosed.

1.4 Continue the development of a suitable food supplement

a. A baseline nutritional study conducted has revealed that the problem of malnutrition with the critical period of the problem is in 0-3 months and 6-24 months. A study conducted by doctors in Tiom (supported by WHO) supported the findings and mentioned that besides improving the nutritional status of 6-24 months children, it is very important to improve the nutritional status of pregnant women.

   To improve the nutritional status of pregnant women (especially to chronic malnourished women) has a potential danger increasing of obstructed labours. As we understand that the problem in infants weight gain during 0-3 months related with the breast milk, we decide to improve the nutritional status of lactating women who have babies that gain weight less than 600 gram per month during first 0-3 months of life.

   This finding is included in the simple health messages.

b. Promotion of sweet potato flour has been conducted. All health center doctors, NGO health workers and even newly graduated midwives all over Irian Jaya have been given training on the importance of sweet potato flour as weaning food and oral rehydration solution. X groups in the community have also been trained on the importance of weaning food. Evaluation of the availability of sweet potato flour at home is being conducted.

We have worked together with PKK to promote the flour in several areas, including in The EXPO 1994-Jayapura. A cadre from Watch was sent to Jayapura as a demonstrator. The opportunity was taken to demonstrate the use of sweet potato flour to the Provincial PKK. They agreed to promote the use of sweet potato flour as the oral rehydration solution.

c. Analysis of the nutritional contents of the sweet potato flour and other foods (such as peanut, maize, soya bean, mung bean and banana flour) has been conducted. BPPT and Watch have worked together on analysing the nutritional contents of flours. By converting food sources to flour, the energy content of sweet potato increases from 156 kal/100 g to 350 kal/100 g. But, as the sweet potato flour needs water to be eaten (made into a kind of baby food porridge), the energy content decreases.

We have promoted the importance of mixing flours as it will improve the energy content of people's diet. Besides mixing flours, we have proceeded with the evaluation of the importance of adding amylase powder from malting the beans and maize. The addition of amylase powder will improve the energy content of the flour (decreasing the viscosity of the flour, so more flour could be added and eventually, improving the energy content).

Analysis of the nutritional contents of the effect of amylase powder is currently being carried out in Bogor.

1.5 Promote and evaluate sweet potato as a super oralyte

We trained X groups to use sweet potato flour as a treatment for diarrhea. We have yet to evaluate how may groups (members) have used the solution properly.

1.6 Develop and implement a nutrition education program

A nutritionist - D3 level - was recruited at the end of February 1995. She has begun familiarising herself with the malnutrition problem in Jayawijaya. In March, she went to Mamit to conduct nutrition education.

Questionner on studying the nutritional intake of the community has been developed. We trialled the questionner in a group community and we found several inputs for the

revision of the questionner. It took 55 minutes to complete the interview (including answering and translating).

The nutritionist left the office end of April 95 for goods as she was accepted as the health government worker in Jayapura. Watch discussed the problem with the Counterpart PM and looked for another nutritionist.

1.7 Monitoring the implementation of TBA training

We have trained 384 TBAs in 10 locations. We have only evaluated the training in Kobakma. The evaluation has shown that TBAs still have problems weighing and reporting accurately. In March 95, the Health Coordinator (HC), in conjunction with the DHO, sent evaluation forms to all doctors and NGO health workers. We have received evaluation forms from 5 centers. We hope to have a complete evaluation by the end of May 1995 after the IST..

The Maternal Care and Epidemiologist consultants will review and revise the evaluation form.

1.8 Develop and implement effective case management protocols for high risk pregnancies

Dr. Mohammad Hakimi DSOG PhD came to give a consultation on developing protocols for four levels of health services (for TBAs, Village Midwives, Midwives, Doctors) in February 1995. After consultations and discussions with several groups (doctors, midwives in hospitals, senior midwives from all over Irian Jaya, midwives students and village midwives students) we developed protocols for Obstructed Labor, Prolonged Delivery and Post Partum Hemorrhage.

To improve the quality of the protocol, the consultant and Ethnographic Consultant conducted an ethnographic study on beliefs in pregnancy.

After discussion with Watch-Consultant, the District Hospital planned to use the partograph for monitoring the progress of deliveries in the ward. Watch will supply with the Partograph.

DR. Hakimi has sent the complete report and we have studied it and sent some questions to the consultant for more information and clarifications.

2.1 Implement a community health education program

Ethnographic studies are the first stage in implementing community health education program. While waiting for the input from the consultant, we have developed simple health messages. We have begun sharing the information with all the NGOs' leaders all

over the Jayawijaya so that they could begin to improve the community's awareness on health problems.

The project has identified several local artists to draw the pictures for the booklets of simple health messages. After we receive the input from consultants, we will develop simple booklets and train all the field officers and coordinator cadres. Then they will be able to communicate this knowledge and skill to the community (especially their group members).

We foresee a problem what will happen when everybody in the community aware of the pneumonia, diarrhea and malaria and then they go to the health centers/health posts which do not have enough medicines and qualified staffs. It is very important to solve this problem.

2.2 Implement a malaria eradication and prevention program

We have had discussions with community groups in the malaria areas and we would like to see all members of the groups use Pyrethrum impregnated bed nets. We are still negotiating with the community as to their level of contribution to the program. We will not proceed with the activity if the people do not want to contribute.

The project discussed with the DHO on using the bed nets. An agreement reached that we will use the bed nets in two places (Elelim and Kobakma). We discussed the design of putting the bed nets inside the local huts. The decision is to use the nets as curtain. The DHO will evaluate the result of the curtain nets.

The discussion with the community on malaria prevention were not very promising. People were reluctant to try drinking a papaya leaves decoction. We will proceed with the idea of putting the papaya leaves inside capsules.

In Oksibil (Eastern sector) we found that the resistance of the Plasmodium falciparum strain of malaria against chloroquine to be around 55%. We have decided to test an alternative decoction. [This drug, artemisinin, is the central itemin the AIDAB funded Vietnam Malaria Project which has only recently begun. In Vietnam it is being produced industrially and in commercial form, a form currently unsuitable for highland consumption due to cost factors.] This drug is produced from Artemisia annua which has been found suitable for growing all over Jayawijaya (several health centers have planted the Artemisia). We have sent the seeds to Depkes Pusat for the development of the medicine and for planting in Tawangmangu.
We have contacted several agencies (PPOT UGM, PAU Bioteknologi ITB, Dept. of Primary Industry-Tasmania, Australia; and University of Geneve, Switzerland - through Walter Reed Army Hospital USA; AIDAB Vietnam Malaria Project) to find simple

ways for extracting the drug at a home industry level . We have sent the leaves to ITB and Geneve. Now, we are waiting for the result of the study.

2.3 Promote and assist in supplying the use of safe water supplies

The project supported the water piping system in Asologaima Health Center. They have used the pipe water for conducting the health services there. We had one safe water supply built in Yelter, Wouma. The community use the water regularly. We had begun another construction in Manda, unfortunately the activity delayed as more urgent need to repair the environment as flood destroyed some parts of the area.

We had identified several groups need of safe water supply (Kelila, Ninia, Popuba, Kiwirok). As the work in Kelila and Kiwirok needs a higher financial support, we tried to link them with YPMD-Irja. There are still no answer of the project proposals.

2.4 Promote and assist in supplying the use of latrines

We have introduced two models of latrines (Blair VIP Latrine - for areas with limited of water and Toilet Bowl latrine - for areas with plenty of water). Several groups have learnt, made and used their toilet bowl latrine.

A cadre from Megapura has started a small business in producing toilet bowls and are taking orders in their neighbourhood. The project will order more latrines from him for other groups who will build the latrines. Another cadre from Kimbim will begin to develop the toilet bowls.

Several NGOs mentioned the importance of developing a video on using the latrines for school children and the people (including here is the importance of cleaning the buttock). Then, we will show the video through the travelling movie car of Family Planning Board in Jayawijaya to the community.

We work together with schools to develop more latrines all over Jayawijaya and will use the video on teaching the children of using the latrines.

3.1 Organise the establishment of viable and sustainable community groups

We have 180 groups in all over Jayawijaya. 5.5 % (10) of the groups have revolved the activities, 40.5% (73 groups) have several success activities, 1.6% (3) with dana sehat - health promotion activities, 18.8 % (34) with Tabanas. We have not completed the

evaluation. We hope end of June 95. The complete list of groups' activities could be seen in Annexes.

In some places groups were organised along community lines instead of only along clan lines. This was an experiment to encourage greater and wider community spirit. Unfortunately, this did not work in all groups. All unsuccessful groups have now been reorganised along clan system lines.

We have appointed 13 Field Officers to help the Project to develop a better monitoring and supervision. They will be in charge of the daily activities in the groups and give reports to Watch. As their benefits, they will receive in-kind activities (seeds and materials) and they will become the model in the communities. Watch provided the evaluation forms (developed by GAD, HC and MEO). Enclosed is the supervision group form.

A in-service-training for the field officer was carried out for 3 days in Wamena. After the training, The Field Officers have begun conducting the group activities and supervising the groups. They began to send evaluation report forms to Watch.

Discussions have been held with the counterpart Project Manager and DHO staffs concerning sustainability of these groups at the end of the project. We agreed that the DHO Nutrition section will have the responsibility for the community groups after the project finishes. In addition to that we will help local NGOs prepare for replacing WATCH as the supervisors of group activities.

We also held discussions with churches' leaders and deacon on supervising, improving the group activities. We encouraged the church to develop or enliven the deaconic services (to improve the sustainability of the groups' efforts).

Group competition of all groups from the Baliem valley was carried out. We asked the group knowledge, skills. The project supported the Women Organisation Group in Wamena to conduct the same kind activities.

The list of the complete groups in the Watch project area is enclosed.

3.2 Train cadres/coordinators in the gender awareness and application modules

Ms. Helen Lock, a GAD Consultant, came to review and provide input to the gender module. We now have a final version of the gender modules. We will produce the modules after the illustrations have been redrawn by two health center doctors.

We have developed three modules (one for GAD to Field Officers/Cadres, one for Field Officers/Cadres to Community and one for GAD Planner). The contents of the modules are basically the same, only more picturesque for the community module.

Several groups have begun applying the modules and the results are quite promising. The community itself identifies their own problems and propose to Watch to work together with them on specified issues.

We have worked together with the district government via the Bangdes office to implement the gender approach and plan to implement the approach in all subdistrict and district offices in Jayawijaya. The GAD coordinator has been elected as the trainer and supervisor. In addition, we have also been working with PKK Kabupaten on gender issues. We collaborate with the Bangdes office to produce modules for every officers in the subdistricts.

The suggestion from the Gender Consultant mentioned that it is better to work with the school children to improve their gender awarenss. Thus, we work also with the Department of Education to develop a simple textbook (for third or fourth grade elementary school) for improving the gender awareness.

This is an example on how Watch activities have influenced a change of policy at the district level.

3.3 Provide infrastructural support with bridges, tracks

We have built a total of 25 bridges throughout Jayawijaya. The lastest one is in Mikma. We plan to build more bridges in the Eastern Jayawijaya areas. In Iwur, our plan to develop a bridge in line with the Bupati's plan but in conjunction with the head of Oksibil subdistrict, health center doctor, NGOs and military officers. To develop Iwur from isolation, the bridge connecting the airstrip to the center of the village is very important.

The Bupati will develop the airstrip (improvement from airstrip for only Cessna to Twin Otter) and Watch will build the bridge and the ditches along the airstrip. If those plans works, Iwur will become an important part of the developments of Oksibil subdistrict).

The Bupati has cited one airstrip assisted by Watch (in Ndundu, Karubaga) as good example of community participation in development. It would have cost millions of rupiahs if developed by contractors, but the people, with only a little help from Watch, have developed the airstrips. WATCH has helped the communities to build two airstrips. The approval from the Transportation Ministry is needed before the airstrips are fully used.

Village people in Aboy-Luban, Okbibab (Eastern Highlands of Irian Jaya) have built tracks which have lessen the journey between villages from 8 hours to 5 hours.

3.4 Research and introduce product lines for income generation

The GAD Assistant (GADA) trained at Pusbangtepa- IPB (Centre for the development of food technology) in Bogor on new product lines. She learnt about many products that could be developed in Jayawijaya for income generation activities.

The GADA has identified several groups that will have fully developed home industry activities such as Mamit (peanut production - salted peanut), Kobakma (peanut oil), Kanggime (same as Mamit), Kimbim (tofu and kembang tahu), Waga-Waga (tofu), Wouma (chips and cookies production), Bokondini (tofu), Obiya (potato chips).. Some groups have begun their activities (production and selling), other still learnt to make the product. Three groups have received benefits and two groups just began with the soft opening period.

To improve the marketting strategy, we work together with Yayasan Pengembangan WiraUsaha Irian Jaya to train the groups on money management and others management.

The project aim to develop a home industry activity for Artemisin production. A support from ITB-GAMA and Geneve needed before the project could begin.

3.5 Support the establishment of cooperatives

A central cooperatives has been developed in Wamena. The management, however, has some problems as working together is still difficult for many people. Our role in the cooperatives could be to assist in strengthen the cooperatives. We have discussed the possibility of PKK Jayawijaya to involve in the supervision of the cooperative.

Several community kiosks, the first stage in the development of cooperatives have begun and are showing profitable beginnings. The project still needs to help the community on money management.

4.1 Coordinate regular in-service training for health personnel

We had regular IST twice a year for all doctors (head of health centers) in Jayawijaya district. We discussed several issues, asked the doctors to evaluate the project activities in their area and improved the doctors knowledge on several subjects (speed reading, health anthropology, and management).

Discussion have been held with the DHO to set appropriate times for in service training. To improve the efficiency and effectiveness of IST, we will set the time at the same time of the doctors meeting in Wamena.

4.2 Conduct and supervise inter village visitation programs

We have conducted 2 times visitation programs to Tiom. There the field officers have learnt about mixed farming and terracing. BPPT and local staff of the Agriculture Department have been involved in the training of the field officers.

4.3 Participate in AIDAB coordinated inter island visitation program

The Monitoring and Evaluation Officer (MEO) gave a presentation in Lombok at an IPVO meeting in November. While there, he visited and learnt about community activities in the AIDAB funded Healthy Start for Child Survival project..

It should also be noted that the MEO was the beneficiary of an AIDAB scholarship to attend a management training course for NGOs held at the ACPAC Training Centre in Sydney for 6 weeks in February and March. He also took the opportunity to present Watch activities in front of WVA's Melbourne staffs.

We propose to send the Health Coordinator to visit the Lombok project too after settling into her new job in Watch. We also propose for the GAD staff to visit the community project in Merauke at a suitable time.

4.4 Conduct visitation and sharing/training program

We have sent one staff member from the nursing school to visit the nursing schools in Java. This program is very important to expose the nursing school staff to new developments in the training of nurses in Indonesia. We expect that this experience will improve the quality of teaching in SPK Wamena and benefit the community in Jayawijaya (especially women and children's health). We also send one more person in the April 95 to Bandung.

Four Field Officers were sent to Balai Penelitian Ternak, Ciawi Bogor to improve their knowledge of animal husbandry. They learnt about rabbit, duck and chicken raising for one month. Besides that, seeing "the Java" also motivated them to encourage their community to develop themselves so they will not "left behind" from the Javanese people. They have begun to apply their knowledge in the community. One cadre, according the head of Oksibil subdistrict (Camat), has worked to campaign on good livestock activities.

4.5 Research and coordinate higher studies program for specialist staff

No activities.

5.1 Monitor use of the computerised health information system

DR. Haripurnomo conducted meetings with DHO staffs, Health center doctors on Health Information System. On the discussions, we understood that the forms that the health center should filled increase from 27 forms to 33 forms. He agreed with the need of a more simple health information forms (agreed with what the project has been doing). The minute of the meeting is enclosed.

The consultant will produce report/recommendation for finalizing the computerized HIS.
We have yet to contract computer programmers to assist in the development of the health information system.

5.2 Design and conduct regular surveys of all project activities

We had develop a set of indicators for evaluating the effectiveness of the project. Four out of the 8 data collectors have now been identified. The other delay in beginning this activity has been the absence of the MEO in Australia..

Meanwhile, the 13 field officers have been collecting data besides their main jobs to liaise with Watch and to help the community development. They have begun to send their evaluation forms back.

We have asked the Counterpart Project Manager (DHO) to ask the doctors in the health centers to help in the evaluation not only health, but also community development. Even tough this has been discussed with the doctors they have been slow to assist Watch (understandable). The Counterpart PM is now considering formalising this responsibility as part of their duty statements.

It is the same reason why we use SPK's students as data collectors for evaluating Watch activities. For one month (May 1995), 38 students will be at the villages as part of their academic activities, meanwhile they will also evaluate the community development groups activities.

Three-days training held with the students for preparing the data collection. We used the forms developed by Watch staffs and reviewed by DR. Haripurnomo.

Some informal evaluation on Watch activities has come unexpectedly from other parties, such as from LIPI. Following a visit to Ninia, the LIPI staff told us that WATCH has produced a lot of

good community activities (especially the results of the rabbit program). A NGO person commented on the output of Watch as the blooming of rabbits every where in Nduga area.

5.3 Train 6 data collectors

See comments on 5.2

6.2 Produce regular reports

Two three-monthly reports produced. The quality of the reports is still very poor. PM could not produce the reports that reflect the real happening in the field. A new arrangement by AIDAB will improve the quality of report by PM.

PM assured that more evaluation reports produced in the next future. We have stressed this matter to all field officers, and the counterpart (project manager and NGOs). We hope that in PCB April 95, we begin to share some information of the evaluation results.

6.3 Organise linkages at kabupaten level

Three 2-monthly district level meetings conducted in Wamena. These meetings are a forum for all sectors related to health and development in Wamena to discuss several issues such as nutrition, IDT and other development problem.

The host of the meeting is in turn. The next meeting will be held in May 95.

V. PROBLEMS & ISSUES ENCOUNTERED AT THIS SEMESTER

5.1 Confounding Factors:

The secret of success in the project is groups. We appreciate the vast variety of tribal groups all over Jayawijaya. Generalisation is not the rule in the Jayawijaya district. For example about clan system. The project are aware of that problem. But, the project decided to work on groups consisting different clan to encourage the community to share and work together. In some groups it work well, but in the same portion of groups did not work well.

The project sees the problem of working in a vast area. If there were a chance to turn the time back, a model of group activities should be developed in every center before working with many community groups. And we should find the common or basic behaviour of all tribes in the highlands.

Counterpart PM mentioned the problem of culture that could hamper the gender approach in the community. The change the culture of the people will need a long of time, generation may be.

Many parties stressed again the importance of sustainability. It is very importance to use the chance of the next 2 years preparing the community, local NGOs, bidan and bidan desa to take over the activities. Without that preparation, it is difficult that the project could sustain the activity.

Evaluation of the project is lag behind. Without evaluation, Watch project could not achieve its objectives as the model of health project in the highlands.

5.2 Supporting Factors:

The intersectoral relationship in the Jayawijaya highlands district is very good. They provide some insights into the problems of community development in the district. The support of the NGOs workers is very good too. The project and the NGOs built the community strategic plan to ensure the sustainability of the project after the project life.

The approach on targeting welfare than health is supported by many NGOs who work in the local area (it means a benefit for the project that the project's aims are not contradicting the NGOs work in the area - sustainability ensured). Even, the government sees the project as an innovative experiment (and let the project to improvise the approach). Adoption is a matter to show the result of evaluation.

DISCUSSION

Recent declines in mortality rates in Jayawijaya district health office, Irian Jaya province, Indonesia may be attributed to a well developed and an intensively utilized health care system, but future progress will be depended upon an intersectoral approach to secure better health.

Various studies found that a large percentage of diseases in underdeveloped countries are derived from socio-economic conditions. The factors which affect disease are given in the equation below [15]:

$$D = f(W,S,H,E,N,S_x,H_f)$$

D	=	disease of an individual or family
W	=	water
S	=	sanitation
H	=	housing
E	=	education
N	=	nutrition
S_x	=	sex difference
H_f	=	access to health facilities

It is known that the underlying factor which affect housing, water, etc. is income of a household. The income of a household itself relates to the distribution of political power [15].

A health strategy that attempts to reverse and short-circuit the historical sequence - improvement in nutrition, housing, water supply, sanitation, and medicine -through exclusive reliance on curative medicine will bring down death rates, but will not ensure sustained improvement in health.

A Kerala study has shown that low mortality levels can exist with a high prevalence of ill health (including nutritional status). This is because to the overemphasis on social development alone.

Morbidity is determined primarily by risk factors related to exposure to disease (housing, water supply, sanitation)-factors that are powerfully influenced by income. Mortality can be contained where curative medical services are readily accessible and the population is literate, mobile, and able to articulate and express its demand for services. Nutritional status is determined primarily by food consumption, powerfully mediated by either subsistence food production or an income to command food from marketplace. Nutrition-related mortality and acute malnutrition may be prevented through a strong health and nutritional program. These services, however, are not likely to affect the overall nutritional status and anthropometric characteristics of the children [16,17].

Technology-focused efforts face formidable barriers to success. Progress has been dependent not only on the supply of technology and services but also upon an educated and politically conscious

population able to use and make demands upon the service infrastructure. Technological change in the health sector thus cannot be viewed outside the context of these broader socioeconomic and political forces.

This approach holds that selective interventions can improve health without needing to integrate improvement in people's economic, social and political environments. The strategy depoliticizes health, and naturalizes poverty whereas PHC is anti poverty [18]. Thus, selective PHC is contradictory with the essence of PHC.

In the light of these problems, we see that Gender Approach is very important as a part of the strategy of comprehensive primary health care where women systematically subordinated [13]. It democratizes people (all the decision making for any activities are from the community themselves), and it tackles the root of health problems.

Besides that, many processes of development have detrimental effects on women. For example, Establishment Program of IMF and structural adjustment of World Bank that are said "Gender Neutral", actually have a bad effect on women (cut of subsidy on food, education and health, made women work harder) [19]. The Gender and Development approach (improving demand and supply of health services) could avoid the effects of the structural adjustment.

With our approach by tackling the root causes of ill-health through combination of approaches such as the Gender and Development approach then health is the logical consequence of improvement of the root causes of ill-health [19].

Before the implementation of the activities, we understood that several constraints existed.

The difficulties:

1. No social preparation

Building relationship with the community is very important in any activity. The community should understand what is the meaning of community development, what is the importance of sustainability and revolving kind of activities.

Revolving is a sociological approach where people should pass on the benefits of their project activity to other groups. But, this approach forgets the people's culture. In some of Jayawijaya cultures, sharing is unbelievable because treachery is a most respected activity.

For these kinds of groups, an appropriate approach should be determined before the project begins.

Therefore, the collecting of people's needs and demands beforehand is very important. If the social preparation is conducted, project activity can go on more smoothly.

2. Silence culture

The women in this culture are subordinate to men. They also have a reticence to speak their minds, particularly if men are around. It is therefore extremely difficult for any researcher to gather information that reflects the true state of affairs for women.

3. Geographical (transportation)

This problem, in the project thinking, is the biggest constraints. The geographical vastness is related to time and cost. Supervising and monitoring are a challenge.

4. Evaluation

If the evaluation of the activities is focused on the impact of the interventions, it could not find the changes in the communities. It is better not only to concentrate on the impact, but on the process, especially on evaluating the community participation's involvement [20,21].

CONCLUSION

Improvement of health and nutritional status of women in Jayawijaya depends on the interventions to solve the root causes of ill-health of women. The root causes of ill-health of women in Jayawijaya are gender imbalance, lack of income and poor quality of health services.

Improving those factors based on the communities will have an impact on health and nutritional status of women in Jayawijaya district, Irian Jaya province, Indonesia.

REFERENCES

1. Van Amelsvoort VFPM. ***Culture, Stone Age and Modern Medicine. The early introduction of integrated rural health in a non-literate society. A New Guinea case study in medical anthropology***. Assen, Van Gorcum, 1964.

2. Schiefenhövel W. ***Reproduction and sex-ratio manipulation through preferential female infanticide among the Eipo, in the Highlands of West New Guinea***. In Rosa A, Vogel and Bland E (eds). The Sociobiology of Sexual Reproductive Strategies. London: Chapman and Hill 1989.

3. Holmboe-Ottesen G, Mascarenhas O and Wandel M. ***Women's role in food production and nutrition: Implications for their quality of life***. Food Nutr Bull 1988; 10(3): 8-15.

4. Susanto-Sunario AS (ed). ***Kebudayaan Jayawijaya. Dalam Pembangunan Bangsa*** [Jayawijaya culture. In Nation development]. Jakarta, Pustaka Sinar Harapan 1993.

5. Susanto-Sunario AS. ***Evaluasi Penelitian Pengembangan Masyarakat Pedesaan Wamena/Jayawijaya/Irian Jaya/LIPI (1987-1993)*** [Evaluation of Research and Development of Communities in Wamena villages] (unpublished).

6. Watch Project. ***Gender and Development Baseline studies***. (unpublished 1993).

7. Hyndman DC. ***Gender in the diet and health of the Wopkaimin***. In Frankel S and Lewis G (eds). A Continuing Trial of Treatment: Medical Pluralism in Papua New Guinea. Dordrecht, 1989: 249-75.

8. Gwatkin DR, Wilcox JR and Wray JD. ***Can health and nutrition interventions make a difference?*** Washington CD, Overseas Development Council Monograph no 13, 1980.

9. World Bank. ***World Development Report 1993. Investing in Health.*** New York, OUP, 1993.

10. Panter-Brick C. ***Seasonality of energy expenditure during pregnancy and lactation for rural Nepali women***. Am J Clin Nutr 1993; 57:620-8.

11. Freire P. ***Pedagogy of the Oppressed***. New York: Herder and Herder, 1970.

12. Collins DE. ***Paulo Freire: His Life, Works and Thought***. New York: Paulist Press, 1977.

13. Hope A and Timmerl S. ***Training for Transformation. A Handbook for COmmunity Workers.*** Gweru; Mambo Press 1984

14. Moser CON. ***Gender Planning in The Third World: Meeting Practical and Strategic Gender Needs***. World Development 1989; 17(11): 1799-1825.

15. Lepowsky M. ***Sorcery and Penicillin: Treating Illness on A Papua New Guinea Island***. Soc Sci Med 1990; 30(10): 1049-63.

16. Zaidi SA. ***Poverty and Disease: Need for Structural Change***. Soc Sci Med 1988; 27(2):119-127.

17. Panikar PGK and Soman CR. ***Health Status of Kerala: Paradox of Economic Backwardness and Health Development***. Trivandrum, India: Center for Development Studies, 1984.

18. Marga Institute. ***Intersectoral Action for Health: Sri Lanka Study.*** Colombo, Sri Lanka: Marga Institute, 1984.

19. Kanji N. ***Charging for drugs in Africa: UNICEF's 'Bamako Initiative'***. Health Pol Plan 1989; 4(2):110-120.

20. Elson D. ***Structural Adjustment: Its Effect on Women.*** In Walace T and March C (eds). Changing Perceptions. Writings on Gender and Development. Oxford; Oxfam 1991.

21. Rifkin SB, Muller F and Bichmann W. ***Primary Health Care: On Measuring Participation***. Soc Sci Med 1988; 26(9): 931-940.