JAYAWIJAYA
WOMEN AND THEIR CHILDREN'S HEALTH
PROJECT REVIEW

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Glossary

ARI	Acute Respiratory Infection
AusAID	Australian Agency for International Development
BANGDES	Directorate of Rural Development
BAPPENAS	National Development Planning Agency
Cadre	Voluntary health worker at community level
CMP	Case Management Protocol
DEPDAGRI	Department of Internal affairs
DEPKES	Department of Health
DHO	District Health Office
FAO	Food and Agriculture Organisation
GAD	Gender And Development
GOI	Government of Indonesia
HC	Health Coordinator
HIS	Health Information System
IEC	Information Education and Communication
IT	Information Technology
LEISA	Low External Input Sloping Agriculture
LIPI	Indonesian Institute of Sciences
NGO	Non-Government Organisation
PCB	Project Coordinating Board
PKK	Family Welfare Movement
PLA	Participatory Learning approach
Posyandu	Integrated village health post
PRA	Participatory Research Approach
PROTAP	Case Management Protocol
Puskesmas	Sub-district Health Center
SPK	District Nursing School (*Sekolah Perawat Kesehatan*)
TBA	Traditional Birth Attendant
UB	Small Cooperative groups (*Usaha Bersama*)
UGM	Gadjah Mada University
WATCH	Women And Their Children's Health
WV	World Vision
WVA	World Vision Australia
WVII	World Vision International Indonesia

EXECUTIVE SUMMARY

The remote areas of the Irian Jayan highlands provide immense challenges to delivery of health services. Using trial and error and flexible approach, the WATCH project has evolved a model of health care which is specific to the conditions experienced in the highlands. The model integrates curative and preventative health strategies with initiatives to improve the formal health system and to enhance community development. A key strategy for the improvement of women and children's health is seen as the correction of gender imbalances. The amount of work that women do impacts on their health and energy, their ability to care for children, and their opportunity to access health services. The project has attempt to address gender asymmetries but has had limited success in the short period in which the gender awareness intervention has been implemented. Poverty and limited food production leading to poor nutrition, are also viewed as vital elements in the causal chain of poor health. Community groups varied in the degree of success, however, there is evidence of increased and diversified agricultural and livestock production.

The project is well managed with high quality, committed staff. It has successfully coordinated its activities with various government departments, semi-government authorities, and non-government institutions which have been involved in project intervention, and enjoys a good working relationship with its counterpart, the DHO. The project's activities and staff are well-regarded at all levels of government and their ideas have been incorporated into provincial planning. Nevertheless, staff are over-extended and have had difficulty implementing and supervising activities across all project areas. This has resulted in a reduction in the number of communities which are the focus of WATCH activities and possibly has contribute to delays in the development of key components such as the gender Awareness module. Some staff positions appear not to have been filled, or personnel have not been replaced. As a bilateral grant project, WATCH needs to be more aware of its responsibilities in this regard.

Many of the WATCH intervention to strengthen the capacity of the *formal health services* are close to sustainable, including improvements to nursing and midwife training, a simplified Health Information System; and a package of Case Management protocols. Nevertheless, supervision of health workers in the use of the Case Management protocols and in providing accurate data for the Health Information System remains a weakness. The use of sweet potato flour has been promoted with limited success in some communities as a weaning food and as a substitute for commercial oralite. Gender Awareness training has been given to the health workers, other government officers, NGO workers and cadres. The impact on their attitudes and practices has not been evaluated by the project. The malaria prevention campaign has been unsuccessful due to the poor quality netting available through DHO. A healthy homes initiative has been dropped from the project. DHO staff have an increased awareness of the links between community development and health.

The community development activities which require a longer period to become established in the communities have less potential for sustainability. This situation has been accentuated by the delayed development and implementation of some intervention by over-stretched staff. Tardiness in providing technical support through the appointment of consultants has also contributed to the situation. Supervision and monitoring of community activities by WATCH personnel is constrained by the difficult logistical constraints of the region. The quality of volunteer cadres who are to supervise and monitor project activities within the community groups, and the lack of women cadres, are important issues which need to be addressed.

Nevertheless, the health groups, which are the key building block for the project's community development model, show a general trend forwards on the evaluation scale which has been developed by the GAD coordinator. The number of groups at the lowest level have declined from 25 to 1, while the number of groups in the uppermost level have risen from 0 to 3. Anthropometric measurements prior to the drought suggest improving nutrition in target groups, although the degree to which this is directly attributable to project interventions is indeterminable. Health posts (*posyandu*) have been established by many target groups to successfully enable women to access health services close to their homes. However, the income generating activities intended to provide more income for health expenditure have tended to be appropriated by men, giving them greater control over the income gained.

As women are ones who are more likely to spend money on their own and their family's health needs and on food, this is of concern. While men are now aware that they should be helping women more in their work, the extent that this is carried out, as evaluated using PRA techniques, is very limited. Intensified and diversified agricultural and livestock production is being achieved by many of the health groups, though with some losses due to disease and theft. Marketing of produce remains a problem both because of lack of transportation, and because of the lack of marketing skills, links, and facilities. A more diversified diet is essential for improved nutrition and food security, however, there is resistance to the project's attempt to incorporated new foods into local diets. Several bridges have been built as a part of the infrastructure activities. There was no evaluation of their use for accessing health services and markets.

It is recommended that an *extension of two year* be given to the project to provide a period for greater consolidation, evaluation, documentation and improved sustainability, especially of the community development aspects which underpin the project's primary health care model for the highlands. Two locations have been identified as alternative focus areas. Of these, Kanggime is the preferred option as it can be more easily supervised and the health groups are already at a more advanced level. To assist the project's progress towards sustainability, staffing additions include a male GAD assistant and the reappointment of a Monitoring and Evaluation Officer. A number of short-term consultant inputs are suggested for GAD/community development, community health education, small business management/cooperative development, and the comprehensive documentation of the project.

In planning the details of the project for two, issues which should be considered are the appointment of resident Field Officer for improved supervision of health groups; strategies to increase community participation especially especially of women; dietary change and improved nutrition; market linkages between the community and distribution in Wamena , and the strengthening of health education at the community level. The development of materials suited to people who have low levels of education and who do not speak Indonesian, and the lack of some essential health equipment should be addressed. Counterpart funding for DHO needs to be accessed. Links to district, provincial and NGO development programs to improve community facilities should be pursued. Funding for school and water supply are two essential needs which may be able to be obtained by linking with other programs. The project's computer equipment needs upgrading.

Strategies for sustainability and continuing supervision on completion of the project should be a focus of the project's activities during the extension. These should include intensification of PLA to increase community capacity and 'ownership' of activities after the project has ended; the strengthening of NGO capacity to assume a supportive role; the further institutionalisation of the Gender Awareness module; and the comprehensive documentation of the project's processes and the materials which have been developed.

Cost are likely to be higher than that suggested in the Draft Concept Report which presented the extension period as one of gradual winding down rather than consolidation and intensification of activities in preparation for closure.

Recommendations for planning the project extension are found in section 7 of the text.

1. BACKGROUND

1.1 Project Rationale

Women and their children's health is a significant consideration in the Indonesian government's health program. However the provision of health services, especially to remote regions, is a daunting task. Studies in the late 1980s pointed to the urgent need to improve the effectiveness of the primary health care program in Irian Jaya where historically missions, mainly trough their health-oriented NGOs, have played an important role in filling the gaps in government health services.

Maternal and infant mortality in Irian Jaya is high and life expectancy is low. Prevalent diseases include respiratory tract infections, diarrhoea, and an increasing incidence of malaria. Sexually transmitted diseases are also of concern as greater contact and movement of people occurs. The highland district of Jayawijaya presents particular challenges for tackling health issues and delivery of health services. These include mountainous terrain, lack of transportation and communication, a scattered population, poverty, social transformation and dislocation, women's low status, low education levels, lack of clean water, poor sanitation, periodic famine and political unrest.

Jayawijaya district is poorly serviced with health centres and clinics. Travel to distant health centres is difficult, especially for women who cannot be away from home for long periods because of their domestic and agricultural responsibilities. In addition, the cost of medical services is often beyond the means of rural people. The level of human resource development is a problem. There is a lack of well trained health service personnel and high turnover of medical staff.

Health knowledge amongst the community is lacking with few people understanding the basic principles of health and nutrition. Poor nutrition is widespread. Animal protein is not eaten regularly and the range of food consumed is limited. Furthermore, while the population density in Jayawijaya appears low relative to land area, the capacity of the land to provide the nutritional requirements for the population on a sustained basis is also low. In the latter half of 1997, drought conditions and fires reduced food production– in particular that of the staple food sweet potato – in some areas (see Annex 1– Brief Comments on the Drought)

The complex and challenging nature of the situation in Jayawijaya has demanded an innovative and flexible approach to improved health care. This has to a certain extent been able to be achieved by the WATCH team who, within the financial and logistical constraint imposed on them, have responded to challenges with new approaches when necessary. One example of this is the development of the use of sweet potato as a treatment for diarrhoea and as a weaning food.

1.2 The Project

In 1991, the Jayawijaya Women and Their Children's Health (WATCH) project which is an Australian bilateral project was commenced. An NGO, World Vision, was appointed the implementing agency. The project is managed by World Vision Australia (WVA) and implemented by World Vision International Indonesia (WVII) in conjunction with the District Health Office (DHO). WVII have good local knowledge of the region have active in the health sector in the province since 1975. During the period of the project, staff have all been Indonesian. Few Iran Jayan have been employed except in low positions, largely because of human resource development amongst local people.

Over the six year period of its implementation, the form of the WATCH project has evolved in response to the particular institutional, social and economic needs of the highland region. The multi-sectoral approach of the model attempts to integrated improvements in the formal health system trough the provision of infrastructure, training and equipment, together with community development and agricultural and income generating activities aimed at strengthening the capacity of local groups to lead the way in improving their community's health. Gender relations which are weighted against women, in particular their work burden and lack of participation in decision-making, are viewed as a key cause of ill-health amongst women and their children. A shift towards more balanced gender relations is considered by WATCH as an important evenue to improving women and children's health status.

In 1994, the project was given a favourable review by Dr. Michael Dibley and was extended by three years to 1997. A second extension application has been made at the instigation of the DHO and District Regent to extend the project by a further two years. The purpose of this consultancy is to review the effectiveness of activities in the first extension; to advice on whether a second extension should be approved; and if so, the direction a second extension should take, with the increased potential for sustainability the primary consideration. The material for the review was collected from project documents; discussion in Jakarta with AusAID, BAPPENAS, the Departement of Health and World Vission International Indonesia; and in Jayapura with officials from BAPPEDA and the Department of Health. Over seven days in Wamena, formal and informal discussions were held with the WATCH team, the District Health Office, the District Regent, a church and NGO leader, and PKK representatives. Four site visits were made to Kanggime (Kumbur), Kurima (Korupun) and the Baliem valley (Obiya dan PKK Paroki Kimbim).

2. EFFECTIVENESS AND IMPACT OF THE FIRST EXTENSION

2.1. Project Management and Technical Support

The WATCH staff are committed, enthusiastic and well-organised. However, in general, the project staff appeared over-extended in carrying out their duties especially in light of the arduous field conditions. Attempts have been made by them to compensate for the lack of personnel. For instance, office staff including the janitor were asked to assist with the supervision of some nearby health groups in the Baliem Valley. The demands on staff time are intensified by external requests from DHO, WVII, LIPI etc. for assistance with other activities including drought relief and information technology expertise. The close relationship of DHO and WATCH, the lack of capacity of DHO and the fact that some WATCH staff are seconded DHO staff creates pressure to comply with DHO requests in particular.

The position of Health Coordinator (HC) has changed three times over the six years of the project and may have influenced the effectiveness of this component. The current HC states that she is committed to staying. The key position of Project Manager has changed twice in the last 2 years when the individuals concerned took up scholarships to study in the USAO and Australia. These changes in leadership do not appear to have affected the activities and focus of the remaining members. The community Development Coordinator was not replaced after April 1994. The GAD Coordinator has taken over the substantial Community Development responsibilities, as well as the GAD activites. The combination of GAD and Community Development responsibilities has been relatively effective but have resulted in the GAD Coordinator being over-extended. There have also been some difficulties in her communicating with men in the male dominated society. She requires a male assistant to support her activities (Recommendation 7,2,3).

During the period of its implementation, the project has had a budget carry-over which may reflect the over-extension of the staff in that they are unable to carry out project activities. The project appears financially well-managed considering, in particular, the logistics of implementing the project and what has been achieved.

There is a good relationship between the project and the DHO. However, DHO involvement in activities has been limited in that counterpart funding has never been accessed and activities that would have been able to have been undertaken with this additional resource have not been accomplished. Project staff and provincial and district counterparts seemed unaware of the counterpart budget processes. The district counterpart expressed his inability to communicate questions about the issue to higher levels of government. The matter of the counterpart budget requires urgent attention and its resolution before the extension commences (Recommendation 7.4.15).

Internal project coordinating meetings of WATCH staff have been held irregularly over the past year in comparison with the routine of previous years (Recommendation 7.4.1). PCBs appear to have been effective in communicating successes and difficulties and providing direction for the project. Due to the difficulty of communicating with Jakarta via the telephone, it has sometimes been difficult to discuss matters, obtain information and ensure that people understand when issues of project management arise. Reporting of project difficulties, project publications, staff changes, new appointments, etc by WVA/WVII to AusAID have not always occurred. The project has lacked support from WVII Jakarta in report writing skills and English correction. As monthly reports are still being produced by the project for submission to WVII, it would be beneficial that they are also passed to AusAID (Recommendation 7.4.11).

There have been delays in the appointment of consultants for technical support. For instance the gender module was fairly well developed before the GAD consultant was mobilised. The Adult Education consultant has never been appointed. In an extension, all efforts must be made to obtain consulting services early so that maximum advantage can be gained (Recommendation 7.2.4). The two notebook computers are inoperable and the current desk-top computers are out-dated and unable to adequately handle the computing requirements of the project, inluding running a large statistical package or producing quality graphics for the project's IEC needs (Recommendation 7.4.16).

Effective district level coordination meetings are held on a regular basis throughout the year with the project's coordinating field officers, and with relevant government, semi-government and non-government institutions. As a neutral, external body, the NGO has been effective in obtaining cooperation from the various concerned government departments

without interdepartmental rivalry. Informal group meetings (such as that used in the group for Nutrition Concern) at which individual are able to express their ideas more freely have been found by the project to be particularly effective and should be attempted more widely (Recommendation 7.4.14).

At the provincial level the project has had a good relationship with the Health Department and BAPPEDA. Senior provincial health officials are very supportive and BAPPEDA officials were enthusiastic about the project's achievements and the ideas and activities which they had been able to incorporate in provincial planning.

2.2 Institutional and Financial Sustainability

During the first extension the project has commanded good support at district, provincial and national levels of government – its activities are viewed as fitting with the priorities for the development of the region and especially important to the development of remoter areas which the DHO does not have the capacity to service. Ideas from the project have been incorporated into BAPPEDA's planning. It is closely linked to the DHO through a number of seconded staff, including the current Project Manager and nutritionist. This arrangement should consolidate the transfer of expertise to the DHO when the project closes. In comparison with the community development activities, the formal health services activities are more institutionalised with greater prospects for sustainability. Sustainability of these activites after the project ends does, however, depend on the continuing support of all levels of the Health Department and on the availability of funding. In the current monetary situation DHO allowances have been cut, as have those at all other levels of government, and at the time of the consultancy the Block Budget (*DIP Gabungan*) to the DHO had been reduced from Rp 100,000,000 to Rp 50,000,000.

? **Nurses and Midwives' Training:** The capacity of local health services has been improved through nurses and midwives' training which is institutionalised in the district SPK and is also carried out in the health centres. Further institutionalisation occurs through the village midwife's job description which specifies that she is expected to work with TBAs in the village to improve their knowledge and understanding of the birthing process and for handling emergencies. There are shortages of equipment required for these health workers to carry out their duties (recommendation 7.4.13).

? **Health Information System:** Although the simplified Health Information System (HIS) developed by the projec was not adopted as the Indonesia-wide model, it has been approved for use in the Jayawijaya district for five years. The HIS involves data collection of morbidity and mortality levels, maternal and child health information and pharmaceutical dispensing at clinics. Simplified recording forms developed by the project are used, together with the project's standard Case Management Protocols which are designed to improve diagnosis and treatment. The data is then collated on computer at the district level using a program written by consultants from UGM. The HIS is seen as essential for making strategic planning decisions, and increasing the potential for a more appropriate supply of drugs to be ordered for the clinics.

  There is a good level of institutionalisation of the system. Recording methods using the simplified forms are taught to trainee nurses at the SPK. Health workers have been given in-service training in completing the forms. However, the capability of the health workers varies and there is inconsistent supervision by clinic doctors of the use of the Case Management Protocols for diagnosis and record entry. There is no incentive for doctors to provide supervision (Recommendation 7.4.12).

Data entry training for the HIS has been given to two computer operators within the DHO but they continue to require supervision. There is no system for transfer of their skills should they move. There are still some problems with the program and IT skills for future maintenance of the system within the DHO are lacking. There appears to have been no formal evaluation and documentation of the HIS, its methodology and results.

The DHO has no budget for producing the simplified forms necessary for the HIS or for data entry and analysis and will need to be prepared with a budget for this at project completion.

? **Case Management Protocols:** The CMP package consists of a booklet of flow diagrams of disease symptoms. Following the symptoms in the flow chart leads to the diagnosis of the disease and to the Standard Therapy which is the appropriate treatment for the particular disease. The CMP is designed to assist more accurate diagnosis and treatment, especially of the three major diseases of pneumonia, diarrhoea and malaria, to feed more accurate data to the HIS, and to encourage the use of super oralite made from sweet potatoes in treating diarrhoeal disease. Due largely to delays in getting agreement from doctors regarding its contents, it was only finalised in 1996. Further work must be done to consolidate the training and use of the package, and to monitor and evaluate its effectiveness (Recommendation 7.4.11). However, there are already indications of its usefulness and sustainability. The armed Forces are using it during the current drought to assist in the diagnosis and treatment of disease of servicemen in the region.

Training in the use of CMPs is institutionalised in the Nursing School's curriculum. Training has also been given to doctors and health workers at the clinics and to coordinating cadres. However, post-evaluation of training indicates that around 50% of trainees do not reach the required standard of CMP use set by WATCH. Identification of training weaknesses needs to be made and intensive training directed at those weaknesses (Recommendation 7.4.3).

? **Super Oralite**: The use of sweet potato flour solution as an alternative to the commercial oralite solution is institutionalised in the CMP. However, the taste of the commercial mixture is generally preferred by the people. While there has been qualitative date collected through PLA and the transfer of the skills of making super oralite, there is no evalutin of the actual use and success of super oralite in treating cases of diarrhoea in the communities.

? **Malnutrition Management:** The main thrust in malnutrition management for small children has been through the introduction of weaning food made from dried powdered sweet potato mixed with water. The drying and pounding of sweet potatoes to make a storable flour has the potential to provide an additional food source in times of shortage. Training in the production and use of powdered sweet potato, both as a weaning food and as a treatment for diarrhoea, has been given to health workers. PKK, NGO and cadres, and through the cadres to some of the local community groups. However, at the time of the consultancy this activity had only been implemented in limited project areas (including Kanggime but excluding Kurima). Production in the village is slow without the benefits of the equipment used by the project and often falls to women. Storage of the flour has proved difficult. The weaning food has been used successfully to treat malnourished children admitted to the district hospital and training has been given to the parents of those children when they return to their villages. No follow-up study has been undertaken regarding the continuing use of the powder once parents return to their

villages (which may lie outside the project areas). Nor has there been evaluation of the use of the weaning pwder in the project communites (Recommendation 7.4.11).

Another activity directed at nutrition management is the introduction of improved farming methods and the diversification of crops and small livestock. This has had mixed success as an activity to improve nutrition, partly due to the fact that the intervention appears to have been presented largely as an income-earning activity in an effort to move communities from a subsistence to production economy. PLA surveys suggest that people are growing a more diverse range of foods. On the other hand, reports refer to resistance to the introduction of new foods into families' diets, and that people prefer to try to market their produce for the income they can obtain. On a visit to Korupun which has been affected by the drought, people were not eating rabbits they had raised, even though they badly needed protein, because they thought that the project had stated that the rabbits were only to be sold to earn income. PLA surveys suggest that in some communities there is better understanding of the causes of malnutrition. However, there is the potential for improved food security and nutritional management. Greater efforts need to be made to further diversity food sources and to ensure that they are included in people's diets, with approaches including further nutrition education, food tasting, and training in processing and cooking methods (Recommendations 7.4.7; 7.4.17).

? **Malaria prevention:** The project has continued with community education to improve the understanding of the spread of malaria through mosquito bites. Attempts to introduce permethrine impregnated bed nets are unlikely to be sustainable. The quality of bed nets obtained through DHO is very poor and the trial in their use failed because the bed nets tore easily. With the resources available to them locally WATCH has been unable to obtain better quality netting. This activity appears to be suspended as long as no better quality bednets are available.

? **Immunisation:** One hundred vaccine carriers and three cold chain facilities using solar batteries-have enabled vaccines to be better kept at the *posyandu* and clinics (*puskesmas*). Immunisation coverage was said by the Head of Infectious Diseases at the District level to have improved by 23%. Some break downs of the cold chain are reported.

? **Latrines and safe water:** Latrines have been installed by two project groups, and the Catholic church has promoted their use in schools. However, from discussion, people are not using the latrines (Recommendations 7.4.18; 7.4.9; 7.2.4 Community Health Education Input). Water supplies present a problem in some areas especially in the drought conditions (see Annex 1 – Brief Comments on the Drought). Piped water and the construction of water storage facilites have not been attempted by the project (Recommendation 7.4.15 Other institutions). Health education has stressed the importance of boiling water before drinking.

? **Gender Awareness module:** The Gender Awareness module is directed to two audiences. At one level there is a training module for officials and community development planners to increase understanding of the meaning of gender and how to analyse gender issues in the community. At another level, and approach has been developed using pictorial material to raise community awareness of gender inequalities. The material in the module focuses mainly on gender asymmetries, especially women's work burden, and how this affects their health and that of their children. Training in Gender Awareness has been provided to health workers and doctors, other relevant government departments including BANGDES. Food Crops, and Livestock, NGOs,

Churches and the PKK. There appears to be an increased interest in gender issues in the district. The District Governor has established a Gender Awareness Task Force. There is the potential for the institutionalisation of the locally specific module if it can be incorporated in SPK curriculum and the nation-wide gender module currently being developed by UNDP and DEPDAGRI (Recommendation 7.5.3). The module does not address gender issues to do with the younger generation which would increase its long-term impact (Recommendation 7.4.5).

? **Shifts in DHO attitude:** Important shifts in DHO attitude towards a more community oriented approach to health are noted. According to the Head of Infectious Disease at the District level, one of the important things the Dinas had learned from the project was that they 'had to learn from the people and to work with the people'. It was also acknowledged that there was a need for an integrated approach to health including concrete action and the encouragement of self-sufficiency through income generating activities, 'rather than just telling people about health'.

? **Monitoring and Evaluation:** The supervision of enumerators and the issue of collection of valid data has been a problem throughout the project. The measurement of project results has been hindered by the lack of valid data in the baseline survey. The strategy which has developed includes quantitative data collection and the use of PLA for qualitative data collection and for community self-monitoring and planning. Data collection focuses on (a) group development; (b) health status; (c) nutritional status; and (d) the gender profile. Data is collected by a wide range of individuals which increases the difficulties of training and supervision. These include field officers and cadres, WATCH staff, nursing students, health workers, and TBA. Although a comprehensive strategy appears to be in place, the results of the monitoring and evaluation efforts are not easily accessed (Recommendation 7.2.3 Monitoring and Evaluation Officer; 7.4.11).

? **Documentation:** While there is a wealth of material relating to the project, there has been no concise,-yet comprehensive, documentation which draws the material together. This is essential if this model of primary health care in the highlands is to be understood and sustainable in the wider sense of being able to be adapted and applied in other locations. Two key personnel are currently documenting particular aspects of the project. Susasa Srini has received a sholarship to undertake her Masters degree through Distance Learning from UGM. She will document the Gender Awareness Module in her thesis. Dr. Zulvian Muslim, the head of the district DHO is also writing up the project for his Masters degree through UGM. However, these again are only fragmentary. A structured and succinct account of the highland health care model and its processes is necessary before project completion (Recommendation 7.5.4).

2.3 Community Development Activities

2.3.1 Establishment and operation of groups: In the first extension the number of groups was reduced from 100 to 60 based on those which were considered to be more active and which could be most easily accessed and supervised given the project's limited resources. A system of ranking the groups has been developed by the GAD coordinator. Adapted from a method of evaluating *posyandu* (the ARIF system), it systematically assesses groups on the basis of thir achievement of ranked criteria related to the four core components of income-generating activites, organisational skills, health activities and gender awareness. Evaluation of the groups by this method shows a general progression over the past two years towards the achievement of project aims and toward self-sufficiency.

Assessment of the Stages of Group Development

Group Stages	1995	1996	1997
Stage 1 (Basic)	25	10	1
Stage 2	30	39	41
Stage 3	5	8	14
Stage 4 (self sufficient)	0	1	3
Total Groups	**60**	**58**	**59**

It should be noted that the impact of the drought may affect the groups' progress in the coming year, especially those in eastern and south-eastern areas where the drought has been more severe.

Supervision of groups and the activities of cadres have continued to be a problem due to the remoteness of the locations (Recommendation 7.4.2). The sub-district of Kanggime is more easily accessed than other regions and groups are not so spread out. There is the opportunity for more frequent training and better supervision which influence project effectiveness. This factor must be taken into account in considering the project's geographic focus in an extension.

Originally, the groups were selected by WATCH staff based on church groups. However, it was found that the composition of members from different clans created divisiveness and conflict over resources and decisions. Groups were reformed based on single clan membership. Membership has generally declined leaving behind only the core members as other individuals found that they were expected to contribute to activities rather than just receive. (In the four groups visited by the consultant the groups were composed of 4 to 6 couples and their children). Some disagreements have occurred between the project and communities regarding expectations of their respective inputs (Recommendation 7.4.10).

The role of women in the groups was poorly documented (Recommendation 7.4.11).

2.3.2 Cadres: Cadres were selected to be leaders and motivators of the groups and as the link between the group and the project. They are trained in project activities which they are expected to then pass on to the group members. The criteria for choice of cadres has been influential in the loss of membership and in the success or not of project activites. Cadres had to be able to speak Bahasa Indonesia but who were more effective communicators and motivators and who had more genuine interest in project activites were not selected. Some misunderstandings and distrust between cadres and their groups have been evident. Men dominate the cadres. Although there were originally about 25% women cadres. Women have dropped out as a result of the pressure of fulfilling both their own domestic and productive work and the duties of the project or because husbands would not allow them to continue. Project staff noted that it was difficult to recruit women with the required qualities who could replace them. Only two women cadres continue. One of whom is at Kanggime. When male cadres are absent it is difficult for their wives to motivate other members of the group to help continue with the activities such as feeding livestock, gardening etc.

2.3.3 Participatory approach: PRA/PLA was used by the GAD coordinator as an entry strategy to dertermine the needs and objectives of groups and to collect qualitative data. These participatory techniques are vital to improving the degree of sustainability. Activities are more likely to be appropriate to the location. People feel that they have

input into decisions, they have 'ownership' of activities, and are more likely to contribute to their continuation in the longer term. The GAD coordinator requires support in continuing and ensuring the effectiveness of this strategy both in terms of ideas and in additional staff (Recommendations 7.5.1; 7.2.4 GAD/Community Development input; 7.2.3 Male GAD Assistant;).

2.3.4 Gender Interventions: Redressing the gender imbalance in household labour contributions is of primary importance in the project which has linked women's over-work with their poor health and that of their children. The Gender Awareness module was only developed at the end of 1996 and has had little time to be implemented. Such a social shift will require a considerable time to become evident. Nevertheless, there appears to be a slight shift in the distribution of labour in some groups with men providing more assistance to women in the gardens for example in weeding and harvesting. The new system of planting sweet potatoes in small mounds and incorporating compost, also requires men's labour, however, this method has not been adopted widely yet. Men were certainly aware that they should be assisting women. When asked, they always stated that they were helping women more, although whether this was carried out in practice is unknown. Discussion with women was almost always through a male interpreter. There has been little attempt at encouraging men to take more part in subsistence activities including childcare, food processing, and the collection of water and wood. This issue needs to be addressed.

Men traditionally dominate the public forum and community and family decision-making, however, there were instances of women speaking out in public regarding gender inequalities and other matters of concern to them. Women still play very little role in leadership and decision-making in the groups. The gender inequalities inherent in most church organisations make them inappropriate institutions for addressing gender issues at this time.

In the project there is a tendency for men to engage in production for the market, and women to be left with non-income-earning activities. This would appear to be having a further distorting effect on gender imbalances as men gain increased access and control over cash. Women, however, are more likely than men to use any cash they obtain for their family's nutritional and health needs. This is exacerbated because training is not always given to women and men, but is selective. For instance, in one community women were allocated the time-consuming task of production of sweet potato flour because it was demonstrated at the *Posyandu* when they brought their babies to be weighed. Cadres need to be more aware of the need to give equal opportunity for women and men to participate in activities and to encourage men to be involved in non-income earning activities (Recommendation 7.4.4; 7.4.6).

2.3.5 Income-generating activities: Intensification and diversification of agricultural and livestock production is being achieved. The LEISA system of appropriate agricultural practice is being used by some groups. This includes terracing, the use of compost and reforesting slopes. New crops and small livestock and fish have been provided in order to enable groups to increase their income for better access to health services and also to assist them to establish their own health resources at the community level. Many of the groups are doing well, although there are losses due to disease and theft. Goats are dying from the lack of iodine in the soil and require iodised salt. Some equipment has been introduced to assist groups to process plant product, for instance to make peanut oil. One group which was visisted had accumulated Rp 1,800,000 in its health fund from income-generating activities, however, this was one of the more successful groups on the

ARIF scale, falling in the category second from the top. It is not known what level of savings other groups have.

2.3.6 Marketing: Marketing from remote communities is a problem. Surplus production is frequently thrown away and more emphasis needs to be put on different ways of consuming, processing, preservation and storage of produce. Surrounding villages do not constitute a significant market because they are also cash poor and often produce similar goods. In order to create market linkages to Wamena the project is providing seed funding for the establishment of local small cooperatives (UB – *Usaha Bersama*) for the more advanced groups. UB will act to collect local produce for sale and distribution to Wamena and to bring goods including medicines into the community. Members require training in small business management, packaging and marketing. The distribution point in Wamena is a further issue. The PKK kiosk, funded by the Small Activities Scheme administered by Post, is not a viable distribution point especially for perishable agricultural produce. A group of local NGOs have offered to act as distributors in Wamena. Their operations need to be located where they are accessible to local people. They require seed funding for program establishment, and training in cooperative management. Transportation problems are likely to mean there will be difficulties ensuring reliability of supply (Recommendation 7.4.8; 7.2.4 Small Enterprise/Cooperative Development Input).

2.3.7 Income-Generation and Nutrition: Although new crops and livestock (eg rabbits, maize) and foods (eg tahu and soya bean milk) have been introduced, it has often been difficult to introduce them into the everyday diet of people on a long-term basis. The introduced crops and livestock are considered primarily as income-generating activities by the communities, rather than also being important for improved nutrition. As a primary objective of the project is to increase nutritional status and food security, greater attention must be paid to the inclusion of new foods in the diet and the understanding by the community that these new foods are valuable resources for health improvement, not just income-generation (Recommendation 7.4.7).

2.3.8 Infrastructure: Bridges to increase access to health services and improve transport and communications have been the main focus of infrastructure activities and most have been successful in achieving their purpose. It is unlikely that without project support they will continue to be built in the future and they should continue as one of the community development activities (Recommendation 7.4.19).

2.3.9 Spread of Project Benefits: The income-generating benefits of the project are being spread outside the original groups through revolving funds. Many groups, especially those in the top two rankings, are redistributing funds and resources to establish new groups within their communities.

2.3.10 Health Activities: PRA has been used to elicit how the community understands diseases. Health education is then directed to the misunderstandings or lack of understanding of health matters in the community. Health workers are trained in the simple health messages. Material is usually in Bahasa Indonesia which is not spoken or read by many local people, particularly women (Recommendations 7.2.4 Community Health Education Input: 7.4.13).

Health posts (*posyandu*) have been established by many of the groups. These are the links between the community and the formal health system through the area clinic. Health workers from the clinic attend the *posyandu* to check the health of mothers and

babies. Communities have been encouraged by the project to assert their needs for health services by establishing a schedule for the clinic staff to visit them. There are shortages of equipment including weighing and measuring equipment. Drug supplies remain a problem despite the HIS. Information regarding improvements in women's access to and use of health facilities was difficult to obtain although it was stated that men usually made more use of health facilities than women (Recommendation 7.4.11).

2.3.11 NGO Involvement: NGOs, both secular and those connected with various churches and missions, have played an important role in community development in the higlands. Although the project has a good relationship with local NGOs, these organisations are generally weak. They currently lack the necessary human resources and funding to adequately continue supervision of activities after the project closes (Recommendation 7.5.2).

WVII through its area Development Program is expected to continue activities in the area for a further 10 years. The approaches to community development and gender issues used in the Area Development Program have been adopted from the WATCH project. Although it is still in its early development, this program may be able to assist in the support and supervision of WATCH groups, possibly in conjunction with local NGOs. This will aid the sustainability of the WATCH project and improve the capacity of the local NGOs.

3. IMPACT OF THE DROUGHT

Areas to the east and southeast of Wamena are most affected by the drought and fires which burned out gardens. Information regarding the situation of all WATCH groups was not available. Some groups reported shortages or reduced production of sweet potato, although other foods were available. In the reports available, groups did not appear to be suffering famine, rather a reduction in food available. Increased deaths from illness combined with poor nutrition, and increased incidence of diarrhoeal disease because of water supply problems were reported from the southeast. The activities of WATCH in diversifying food sources and improving agricultural production is likely to have been of benefit in maintaining food supplies. The drought and scarcity of staple foods may provide an opportunity for the project to introduce new tastes into the regular diet of people and to encourage production and use of the storable sweet potato flour after the drought.

4. THE APPROPRIATENESS OF THE MODEL

The model developed by WATCH provides a comprehensive and culturally specific approach to health care in the highlands by integrating improvements in the formal health sector and community development. Socio-economic issues such as gender imbalances and poverty have been linked to the poor health of women and their children and the resolution of these issues seen as the key to improved health. Through trial and error over six years a strategy which is appropriate to the region has evolved to improve health service delivery on one hand and, on the other, the improved capability of the community to manage its own health needs and access formal health services. The use of an NGO (World Vision) has been particularly effective in coordinating the concerned government departments and semi-government institutions and in working with the community using participatory approaches.

Improvement in conditions in the contact areas are indicated by:

- apparent decreasing levels of malnutrition based on anthropometric measurements made by DHO (prior to the drought).

- the general progression of groups based on the adapted ARIF system of evaluation.

An important omission in the model is consideration of the links between gender relationship and the transmission and treatment of STDs including HIV/AIDS especially as communities are coming into increasing contact with the outside world.

5. THE CONCEPT PAPER

The Draft Cencept Paper gives broad direction for a two year extension, but requires more specification and detail. The paper presents a period of continuation of activities with a reduction in intensity and demands on staff as the project winds down. Unlike the previous extension period where health centres were located widely throughout Jayawijay District, the Draft Concept Paper focuses on eight centres in the south-eastern sub-district of Ku rima. Four of these centres have had little contact previously with WATCH. The extension is requested in order to strengthen the community development activities, especially income generation and marketing; and to improve the system of monitoring and data collection by DHO staff.

There is no sense in the Draft Concept Paper of bringing the project to a conclusion. Instead, a tapering off of existing activities is suggested with reduced activity and fewer staff.

At the same time the paper suggests concentrating on an area which is difficult to access and to work in, and moving into communities which have had little previous contact with WATCH. Given the time-frame of a two year extension, it does not seem realistic to attempt to work in new and difficult areas (Recommendation 7.2.1). The Draft Concept Paper does not address the need to develop NGO supports for project activities.

6. RECOMMENDATION

6.1. ***Extension:*** It is recommended that the project be extended by two years after the current interim ex tension which ends in April 1998. The second extension should be seen as a period of intense activity to finalise and consolidate previous interventions, and to further evaluate and comprehensively document the model. It will be of particular value in providing additional time for maximising and evaluating the impact of the Gender Awareness Module and Case Management Protocol package which were not developed until late in the first extension.

? Community development and social change require a long time-frame. The extension will contribute to the sustainability of the project's community development activities which require longer to maximise their potential. Most community development interventions did not commence until after the first extension commenced.

? The gender interventions need further adjustment and the greater inclusion of women in activities for added sustainability. The additional time will allow for this.

? The more focused approach suggested in the second extension will improve supervision of groups and greater chance for their sustainability.

? The Case Management Protocols and HIS are close to being sustainable but further training in their application is required.

? There will be more opportunity for strengthening the capacity of local NGOs to take over support of the community development aspects of the project after its completion.

? In a wider sense of sustainability there will be greater opportunity for testing the model and for its documentation. This will improve the potential for its adaptation for implementation in other highland regions.

The recommendations below include suggestions arrived at after discussions with WATCH staff and district, provincial and national Department of Health officials.

6.2. Scope

6.2.1 Location: It is recommended that only areas which have had continuous contact with WATCH be included in this extension period which will be a time of consolidation for greater sustainability and bringing the project to a close. Two locations are suggested for consideration as the focus areas for project interventions:

> **Option 1:** The sub-district of Kanggime offers the main opportunity for fulfilling the project's principle aims in demonstrating the development of an appropriate model of health care for the highlands and improving the health of women and children. The area provides frequent access for better supervision. It has the added advantage of having one of the women cadres. Anthropometric measurements provided to the consultant indicate that in March 1997 malnutrition was higher in Kanggime (13.7%) than in the Kurima sub-district (Korupun 9.6%; Soba 0%; Holuwon 0%) which is the area suggested in the Draft Concept Report. An additional two years in Kanggime would be a good opportunity to evaluate nutritional interventions and their impact on health status and would have greater sustainability than that which could be achieved in Kurima over that period.
>
> **Option 2:** Kurima sub-district was suggested in the Draft Concept Paper and is supported at district and sub-district level because this is seen as a less advanced region, and one in which it is difficult for DHO to service given its limited resources. However, it is extensive, the groups are scattered, and it is difficult to access and supervise regularly. It is hard to motivate the people and for them to accept change. Two hears is unlikely to be sufficient time to bring about significant and sustainable change. However, recently, the people have started to the more receptive to new ideas and it was felt by WATCH that if the project widthdrew, the people would lose heart and may be resistant to interventions in the future. In view of the health and community needs of the people in the Kurima district which as an isolate and economically marginalised region is of special concern to GOI, and in view of AusAID's concerns with eastern Indonesia, it is recommended that consideration be given to alternative approaches:

- ? an integrated agricultural/water management/health project with a gender component
- ? a Small Activities Scheme administered through a local NGO with the added benefit of improving the capacity of the NGO.
- ? WVII or GOI funded interventions.

6.2.2 Activities: It is recommended that no new activities be commenced during the extension and that intensification of existing activities, and identification and rectification of weaknesses be the main objective.

7.2.3 Staff:

- ? A critical appointment is a male assistant to the GAD Coordinator who is working under immense pressure. A male assistant would be able to speak with the men in the community. He should be an agriculturalist and preferably Irian Jaya.
- ? The reappointment of a Monitoring and Evaluation Officer with experience in survey administration and who is familiar with the health system is essential for this final stage of the project because of the importance of improving DHO effectiveness in this area, and to ensure evaluation of project activities prior to project conclusion.
- ? A new staff chart should be prepared.

7.2.4 Consultant Inputs: Given the brief time remaining to the project, it is imperative that consultant inputs should be arranged immediately to obtain maximum benefit.

- ? GAD/PLA/Community Development: The GAD coordinator has done an excellent job but urgently requires ideas from new sources to further address the issue of gender inequlities in the group. It is recommended that a consultant be arranged for a short term input of one month, possibly from those used by projects which have had a community development and gender component such as the FAO supported Integrated Post Management Program, the Alor Community Health or NTT Watershed Management Project.
- ? Small Business Enterprise/Cooperative development: A consultant with experience in Irian Jaya and skills in small business enterprise, including preserving, packaging, marketing, and cooperatives should be arranged for a short-term input of 1.5. months to provide technical support for UB development and the formation of the Wamena cooperative.
- ? Community Health Education: A community health education specialist to develop an appropriate PLA approach to educating communities with limited education and knowledge of Bahasa Indonesia should be employed for one month. Health education was identified as a major weakness by one of the groups visited.
- ? Project Documentation: A consultant a strong background in documentation as well as Health and Community Development should be employed for a short term input of around 3-4 months towards the later stage of the project. Documentation should be available in English and Indonesian.

7.3 *Development of the Concept Plan*

It is recommended that World vision develops a Project Implementation Plan. This should include a 'critical path' of targets to be achieved at specific points in time in order to maintain momentum in this period of consolidation and project completion. A meeting of concerned parties should be held to discuss and finalise the plan.

7.4 *Recommendations for Improved Project Impact and Sustainability*

7.4.1 Internal Coordination: In view of the anticipated intensity of the work and the need to follow the 'critical path', it is recommended that regular weekly or fortnightly meetings within the project be reinstituted. Progress, problems and goals need to be discussed and records kept.

7.4.2 Improved Supervision: The decision to appoint resident Field Officers to improve the supervision of groups is supported. Groups ranked weaker on the adapted ARIF scale used to evaluate groups should be targeted to receive extra supervision and training.

7.4.3 Training of health workers and doctors, TBA, cadres and the community groups needs to be maintained, and weaknesses identified through continued monitoring and evaluation and through visits of the WATCH team to the field.

Training should be given in the local area wherever possible with an emphasis on practical approaches. Women should continue to be encouraged to be involved in all training activities. It may be appropriate to set a quota of women for some training.

7.4.4 Gender Imbalance: Training for income generating and non-income-generating activities should be provided at times and places where both women and men will attend. It should be clear that both men and women are invited to training. Special attention should be made to ensure the greater inclusion of women in low energy and time-consuming income-generating activities and, on the other hand, the greater inclusion of men in non-income-generating activities. These issues need to be emphasised to cadres.

7.4.5 Gender Awareness: During the extension period, Gender Awareness training concerning the gender imbalances in the community should continue to be stressed at all levels – among health workers, doctors, cadres and the community groups. The Gender Awareness module should be reinforced with two brief supplements:

- Parent' child rearing practives which adversely impact on daughters.
- Gender awareness for school age children.

The attention to children and child rearing should increase the long-term impact of the module in that it addresses the next generation.

7.4.6 Cisarua: During the first extension, men made a study tour to Cisarua. Women need to have the same opportunity to broaden their perspectives during the second extension.

7.4.7 Crop Diversification and Nutrition: The LEISA program and crop diversification and intensification should continue to increase the range of foods produced and available for consumption. This is an important strategy to increase food security and decrease vulnerability to drought and crop and livestock disease. It also needs to be combined with an intensification of efforts to encourage the consumption of new foods and learning new ways of cooking, preserving, and processing for sale. The current conditions of food shortages may offer an optimal period for the introduction of new crops and the acceptance of dietary change.

7.4.8 Marketing: Marketing is always going to be a problem given the remoteness and lack of infrastructure in the area. It is recommended that the establishment of small local cooperatives among the groups be supported with training in small business management, ways of preservation and packaging using locally available resources, and seed funding. The establishment of a central cooperative to distribute production in Wamena under the auspices of local NGOs is supported. These NGOs would require training in cooperative and small business management.

7.4.9 Community Health Education: It is recommended that further effort be applied to the development and strengthening of appropriate Health and Hygiene Education at the community level. This was requested by one of the community groups visited and was seen by them as a weakness of the project.

7.4.10 Community Contribution: Disagreements as to community inputs of labour and material has occurred in the first extension. Agreement with the communities needs to be reached regarding not only the goals and values of any intervention but also the various contributions each side will make. This needs regular reiteration to avoid misunderstandings and to contribute to impact and sustainability.

7.4.11 Monitoring, Evaluation and Reporting of all project aspects is extremely important during this closing stage and requires concerted attention. Special attention should be paid to monitoring and reporting on the participation and roles of women in the health groups and their access to the community's health services and on the use of sweet potato as a weaning food and treatment of diarrhoea. Formal evaluation of the HIS is required. As monthly reports are still being produces by the project for submission to WVII, it would be beneficial that they are also passed to AusAID.

7.4.12 Puskesmas doctors: DHO should be assisted to develop a strategy or incentives to improve Puskesmas doctors' supervision of health workers' use of the Case Management Protocols and simplified Health Information System reports.

7.4.13 Quality of Service Delivery:

? Low levels of education: The quality and usefulness of material for the community should be increased by translation into local languages, colouring, and some lamination of materials. Budgeting should include funds for the improvement of the quality of various modules which have been developed including the Gender Awareness Module; the Self Awareness Module; the Better TBA Book; The Environmentally Appropriate Farming Module and the Appropriate Technology Module.

? Shortages in supplies of Tba kits, Weighing equipment, microtoise measuring equipment, and ARI Timers should be addressed and remedied by DEPKES.

- ? Consideration should be given to providing a plastic sleeve to protect the Case.

- ? Management Protocol booklet which is unusable after being wet.

7.4.14 Networking and Coordination: This has been a strength of the project and should be continued at all levels.

- ? Inter-community visits should continue to be arranged between groups in different areas so that people can learn from the strategies of other groups.

- ? Formal and informal meetings between concerned government departments, semi-government authorities, NGOs and the project should continue. Informal meetings are particularly important in enabling people to speak openly.

7.4.15 Improved Inter-Institutional Program Linkages

- ? **Counterpart Budget:** DEPKES, AusAID and WATCH should pursue the question of the procedures for accessing counterpart funding in the next extension period to improve the capacity of DHO to cooperate in WATCH activities.

- ? **Other institutions** have programs which should be linked to WATCH activities in the interest of supplementing WATCH interventions and improving community resources. In particular, WVI schools funding and Public Works water supply programs should be investigated. With community agreement, approaches should be made by WATCH to the relevant institutions.

7.4.16 Equipment: There is a need to upgrade all computers to Pentium level to cope with the project demands, especially the monitoring and evaluation aspects associated with the use of large statistical programs. <u>This matter along with the counterpart budget concerns and the hiring of staff and consultants should be given immediate priority in the extension period.</u>

7.4.17 Nutrition: Together with the Department of Agriculture, efforts should be made to continue to diversify food sources as a strategy to decrease drought vulnerability (note also Recommendation 7.2.4 PLA expert, health education expert).

7.4.18 Latrines: The use of latrines needs further encouragement with improved quality and community health education.

7.4.19 Bridge Construction should continue. Evaluation of bridge use with regard to project objectives should be ensured.

7.5. Strategies for Handing Over on Project completion

7.5.1 PLA/PRA Techniques should be further developed with consultant input (Recommendation 7.2.4) and applied to increase community 'ownership' of activities and to encourage self-planning and initiative in preparation for the project's completion.

7.5.2 Strengthening NGO Capacity: The capacity and interest of NGOs to continue to support WATCH activities after project closure needs to be developed during this final

period. It is recommended that representatives of concerned local NGOs be sent to YIS, Solo or Bina Swadaya, Jakarta to develop their organisational skills for NGO management.

7.5.3 Institutionalisation of Gender Awareness Module

? **SPK Curriculum:** For the continuation of training in gender awareness among health workers, the gender awareness module should be incorporated into the SPK curriculum.

? **UNDP Gender Module:** The possibility of incorporating the WATCH Gender Awareness module into the Indonesia-wide Gender Module currently being designed by UNDP (under Dr. Ida Lubis) and DPDAGRI should be explored. It is recommended that the GAD coordinator discuss the incorporation of her locally specific module with the relevant authorities in Jakarta.

7.5.4 Documentation of the model of primary health care for the highlands is essential before the project closes to enable its possible adaptation and implementation in other locations.

Documentation should include:
- an overview of the model
- cross-cutting aspects such as training, monitoring and evaluation, and coordination
- specific examples of the strategies devised to overcome challenges as they arose
- the materials (eg Case Management Protocols and Standard Therapy booklet; gender module) developed by the project.

7.6 Costs

Based on expenditure during the first extension, costs will be substantially greater than that allowed in the Draft Concept Paper which essentially perceived the extension as a winding down period and allowed only $616,000 over two years. (The first extension had a budget of $1,519,833 over three years) costs will depend to a large extent on decisions made regarding the focus area (transport cost differences), consultant inputs, upgraded computer equipment, tours to Java, and staffing.

ANNEX: BRIEF COMMENTS ON THE DROUGHT

The Drought

There have been about 8 months of severely reduced rainfall in the region which usually experiences almost daily rainfall. Rains commenced at the end of November but at the time of the visit to the field in the second week of December they were not as regular or as heavy as normal.

The effects of the drought have been amplified by fires which spread in the drier than normal conditions and burned out gardens, damaging sweet potato production. Some higher areas have experienced frost damage. The system of cultivation is that the sweet potatoes are harvested as needed, leaving some in the ground for future use and for regeneration. The sweet potatoes have rotted in the dry conditions creating shortages of seed sweet potatoes. WVII and other agencies have planted 'ubi banks' in Wamena to distribute to people who have none. With the commencement of the rains people reported leaves growing but only small sweet potatoes. Because sweet potato takes at least 6 months to mature, food security in the affected areas is expected to worsen, peaking about February.

The Extent of the Drought

The main effects are being felt to the east of Wamena. Those mainly affected are people in the isolated high mountain communities. There is reported to have been a small movement of people down from the most affected areas.

One group in the southeast sub-district of Kurima reported reduced food production but, by their own definition, not enough to be called a famine. Deaths were said to have multiplied two fold with people not dying directly from malnutrition, but from illness because they were weakend by low nutrition levels. A visit to Kanggime to the northwest where rainfall has been more regular found that one group had experienced no decrease in sweet potato production. Another group said that their sweet potato supplies were down a little but that they had plenty of food.

In the eastern area of Oksibil, a doctor reported difficult conditions with people being paid in food aid to work their gardens – 'the more they work, the more they get'.

Water supplies have dried up in some areas. People were going into the valleys to collect water but were not boiling it before drinking, resulting in increased diarrhoeal disease and dehydration.

Distribution of Food Aid

Food is stock-piled in Wamena. Aircraft with the capacity to fly large quantities of food to the most affected areas are lacking. Food is being flown to airstrips for redistribution but it is unlikely to be reaching those communities most in need which are in the higher and more isolated regions.

Wamena

There does not appear to be any significant movement of people into Wamena. Prices of green vegetables in the market have increased two fold and quality is poor. Sweet potatoes are said by the sellers not to have increased in price, but consumers say that there have been some increases. Meat prices are relatively stable.