

**JAYAWIJAYA WATCH PROJECT -
EXTENSION**

**IRIAN JAYA
INDONESIA**

PROJECT DESIGN DOCUMENT

**World Vision of Australia
in partnership with**

World Vision Indonesia

May 1994

TABLE OF CONTENTS

	Page
Maps	i
Abbreviations	iii
Executive Summary	v
1. BACKGROUND INFORMATION	1
1.1 COUNTRY AND PEOPLE.....	1
1.2 PROJECT ORIGIN.....	5
1.2.1 AIDAB Country Program Perspective.....	6
1.2.2 Description of Existing Project.....	6
1.2.3 Description of Organizational Links.....	10
1.3 SITUATIONAL ANALYSIS.....	12
1.4 CONSTRAINTS AND ASSUMPTIONS.....	15
1.4.1 Local People's Attitudes and Expectations.....	15
2. PROJECT DESCRIPTION AND IMPLEMENTATION	17
2.1 OBJECTIVES.....	17
2.2 DEVELOPMENT STRATEGY.....	17
2.2.1 Lessons Learned from Similar Activities.....	17
2.2.2 Project Strategy.....	18
2.3 PROJECT FOCUS.....	19
2.3.1 Specific Location and Description of Target Area.....	19
2.3.2 Intended Beneficiaries.....	20
2.4 EXPECTED OUTPUTS/COMPONENTS.....	20
2.5 PROJECT ACTIVITIES.....	22
2.6 PROJECT TIMING.....	32
2.7 PROJECT INPUTS.....	32
2.8 COSTS AND FINANCING.....	32
2.8.1 Budget Summary.....	33
3. MANAGEMENT	34
3.1 ORGANIZATION AND MANAGEMENT.....	34
3.1.1 Implementing Partners and Their Roles.....	34
3.1.2 Project Staff.....	34
3.1.3 Australian Participation.....	35
3.2 MONITORING AND EVALUATION ARRANGEMENTS.....	36
3.2.1 Monitoring Team.....	36
3.2.2 Reporting Requirements and Procedures.....	36
3.2.3 Project Coordination Board.....	36
ANNEXES	
1.1 Logframe matrix	
1.2 Budget	
1.3 Management structure	
1.4 Activity Schedule	

- 2.1 Problem linkages chart
- 2.2 WATCH Project interventions
- 2.3 Problem linkages in Under 5s
- 2.4 Malnutrition case management
- 2.5 WATCH Project activities
- 3.1 Jayawijaya WATCH Project - Evaluation Report
- 3.2 Low External Input and Sustainable Agriculture (LEISA)

ABBREVIATIONS

AIDAB	Australian International Development Assistance Bureau
APCM	Asia Pacific Christian Mission
ARI	Acute respiratory infection
BLS	Baseline Survey
Bidan	Midwife
BOM	Branch Office Manager
BPPT	Agency for Application and Development of Technology
Camat	Subdistrict
CDC	Community Development Coordinator
CDWs	Community Development Workers
Desa	Village/remote administration
DHO	District Health Office
EPI	Expanded Programme of Immunization
GIDI	Gereja Injili di Indonesia
GOA	Government of Australia
GOI	Government of Indonesia
HC	Health Coordinator
HIS	Health Information System
IGA	Income Generating Activity
IPB	Bogor Institute of Agriculture
Kabupaten	District
Kecamatan	Sub-district
Kader	Village health worker
LIPI	National Academy of Sciences
MAF	Missionary Aviation Fellowship
Mantri	Nurse auxiliary
M&EC	Monitoring and Evaluation Coordinator
MCH	Maternal and Child Health
MOU	Memorandum of Understanding

NGO	Non-government organization
PCB	Project Coordinating Board
PHC	Primary health care
PID	Project Implementation Document
PKK	Bureau of Women's Affairs
Posyandu	Integrated village health post
PM	Project Manager
Puskesmas	Sub-district health centre
SMA	Senior high school
SMP	Junior high school
SPK	Sekolah Perawat Kesehatan (Nurses Training College)
TBA	Traditional birth attendant
UNICEF	United Nations International Children's Emergency Fund
VIP	Ventilation improved pit
WHO	World Health Organization
WVA	World Vision of Australia
WVII	World Vision International Indonesia
Yayasan	Indigenous Non-Government Organization
YKB	Yayasan Kesehata Bethesda

EXECUTIVE SUMMARY

The people of the Jayawijaya district in Irian Jaya have only been exposed to 'modern' civilisation since the mid 1950's. This has exacerbated already poor health conditions and understandings. The conditions of this area make communication extremely difficult and the government labours with inadequate resources to address the various needs of these communities.

The Jayawijaya WATCH Project has been implementing a range of health related interventions in the highlands of Irian Jaya in partnership with the Indonesian Department of Health over the past two and a half years. The ultimate goal has been to improve the health of women and children in the district.

This project has attempted to address not only the symptoms of poor health care and poor health services throughout the district but has also tried to tackle the root causes. This has resulted in a program which addresses issues such as gender imbalance, poverty and lack of community organization. This approach will form the basis of a primary health care (PHC) model that can be replicated throughout the highland regions of Irian Jaya.

A recent review by the Australian International Development Assistance Bureau (AIDAB) found that the innovative approaches undertaken by the project were commendable and appropriate and that the use of a non-government organization (NGO) to facilitate the coordination of many government departments and interest groups was a sound one. However, the review also found that the project needed to address the issue of nutrition more comprehensively and to document the project strategies and findings more systematically.

The Jayawijaya WATCH Extension Project will thus place much more emphasis on the development and monitoring of case management protocols, on nutrition and on a designed monitoring and evaluation system. The project will continue to stress the need to address the root causes of poor health and will implement modules prepared in the first project phase on gender awareness and gender application to life in village communities. Communities will be assisted to become more self reliant and more productive.

The project is planned to begin in the second half of 1994 with a total budget of \$1,459,641 spread over the three years with budgets of \$459,859, \$507,716 and \$492,066 respectively.

1. BACKGROUND INFORMATION

1.1 COUNTRY AND PEOPLE

Indonesia

The republic of Indonesia is a vast archipelago straddling more than 5,000 kilometres across the equator and extending from near to southern Thailand on the Malay peninsula to islands off the north east coast of Australia. It is the largest archipelago in the world comprising more than 17,500 islands. The country is home to over 186 million (1992

estimate) people and is the fourth most populous nation. The people comprise more than 300 ethnically distinct groups speaking dozens of languages and practising 5 major religions.

Indonesia is the Southeast Asian region's largest producer of oil, is a major producer of natural gas, is the largest exporter of liquefied natural gas, is the world's largest tin producer and one of the top producers of low lead tin. If estimates for gold exploration were realised it would also be the third largest producer of gold. The country also has large resources and income from fisheries and forestry products. Tourism is growing and in 1992 it was the twenty-eighth most visited country.

Since 1967, approved private sector investment from domestic and foreign sources totalled just under \$168bn by year end 1992. Of this total about \$63bn has been committed by overseas investors while approximately \$105bn has come from domestic Indonesian sources. Among realised investment in manufacturing enterprises during this period, 67% were concentrated in the secondary industrial sector. Chemicals, textiles, paper products and metal goods, respectively, attracted three quarters of all secondary sector investment and half of realised investments overall.

GDP per capita in Indonesia is projected to rise from its present level of \$675 to reach \$1,000 by the end to the century, lifting Indonesia into the status of a middle income nation. Indonesia has an increasing revenue base deriving from increasing incomes, growing manufacturing base and enhanced tax collection, growing from 30% to 62% during the 1984-85 to 1992-93 period.

More than 42 million young people are enrolled in primary and secondary schools. More than 90% of all Indonesian children complete primary school education, leading to a national literacy rate exceeding 80% through the archipelago.

Despite these impressive figures, over 27 million people still live in poverty and most of them live in the eastern areas of Indonesia.

Irian Jaya

Irian Jaya is a province in transition. The "Go East" policy of the Indonesian government has helped to swell the population of Irian Jaya by 20% over the past five years. Approximately 1.6 million people live in this area covering almost 422,000 sq kms. There has been a 30 % increase in the highlands, which is home to 45 % of the total population. Today 23 % of the population live in urban areas (two-thirds of these are non-Irianese), and 86 % of those are concentrated in the towns of Jayapura, Sorong, Manokwari, Merauke, and Nabire.

The economy of Irian Jaya depends on mining, timber and fishing industries, which contributed 46.8 % of gross regional domestic product in 1985. Manufacturing and other smaller industries are concentrated in the five urban areas. The vast majority of the population is engaged in subsistence agriculture and fishing, which contributed 23.8 % of GDP in 1985.

The province of Irian Jaya is divided into 9 districts (kabupaten). Of these, the two highland districts, Paniai and Jayawijaya, have been designated as highest priority for development activities, including health. The major rationale for this prioritisation is their isolation as there are no land transport links between the coast and the highlands, although there are nearly 200 small airstrips.

Jayawijaya District

The Jayawijaya district is an area of 52,916 square kilometres, 12.7 % of the area of Irian Jaya. It is a rugged mountainous area with altitudes ranging from 100m to 4,750m. The population of the district is about 400,000. This appears to be a low population density but is in fact a high density in relation to its nutritional sustainability. Outside Wamena, the district centre, most people are subsistence farmers, living in small villages or hamlets and following a traditional way of life. The difficulties of transportation in the highlands and the related problem of accessible markets are major constraints on the development of new enterprises.

The community in Jayawijaya is in a state of social transition following the sustained contact with the outside world since the mid 1950s. Many traditional roles in society have been lost or changed at a very rapid pace. One of the major changes has been the loss of the traditional warrior role for men. Another has been the disappearance of polygamy. These changes have contributed to a major imbalance in gender relations today. Men have a confused social identity and no clear economic role. Women are overworked and have limited power within their communities. Therefore, a major challenge for development efforts, including health, in the highlands is to address the impact of changed gender roles on society and to design programs that promote more equity between men and women.

The level of education is very limited in Jayawijaya. In 1980, only 52.8 % of the total district population over 9 years of age had ever attended school and illiteracy rates were still 81.5 % (versus 18.8 % in the province of Fak Fak). Illiteracy rates for women are double those for men. This finding has been confirmed by the WATCH project baseline study which found that 60 to 70 % of women were illiterate and that the ratio of boys to girls at school rose from 2 to 1 in primary school to 6 to 1 by senior high school (SMA). Literacy provides women with the opportunity to understand new information about health and nutrition and gives women the confidence to deal with the community health service providers.

Health

Steady improvement in the Indonesian health care system has seen a doubling in the number of doctors over the past decade. During the past 20 years, infant mortality has dropped from 134 per 1,000 to 50 per 1,000, while life expectancy has risen from 43 to 65 years. The advances in health care have been possible owing to the use of a wide variety of grass roots organizations extending health care to rural areas.

One of the most successful is the integrated health post or 'posyandu'. This movement

operates at the village and hamlet level with more than 200,000 posyandus, providing the community with five basic services: immunisation, nutritional counselling, family planning services, maternal and child health (MCH) care and the control of diarrhoeal diseases. The national women's movement, or PKK, retains an enlisted corps of 1.5 million volunteers who assist in organising and administering this comprehensive health and nutritional service to inhabitants of Indonesia's more remote areas.

Health indices in Irian Jaya however suggest that urgent attention is required. The infant mortality rate in Irian Jaya ranges between 90-120 per thousand live births, with the average being 133 (cf. national average of 73). Maternal mortality is at least 4.5/1,000 in Jayawijaya. This compares with a rate of 1.3 in other parts of the country. The immediate causes of this high rate of maternal mortality are haemorrhage and infection and, less directly, the fact that indigenous women are traditionally assisted in childbirth only by other women and there is a critical shortage of female health personnel, including trained traditional birth attendants (TBAs), in the district.

Nutritional problems are widespread in Jayawijaya due to continued dependence on sweet potato and sago, the unavailability of continuous animal protein and a lack of knowledge about cooking methods and skills. The WATCH project baseline survey (BLS) has subsequently found that 50 to 80 % of preschool children in different communities were chronically malnourished. It also found that from 60 to 98 % of women had evidence of malnutrition (based on a mid arm circumference of less than 23.5 centimetres).

Access to clean water continues to be a problem with only 26 % of the rural population having access to clean water. Knowledge of and resources for good sanitation are very unevenly spread. For example there are few resources for constructing latrines. Houses continue to be smoke-filled, despite efforts to introduce "healthy houses."

Communicable diseases, including malaria, which is now emerging in the highlands, tape worm infection, venereal disease, acute respiratory tract infection (ARI) and diarrhoea are still significant health problems. Pneumonia accounts officially for 26 % of infant death, diarrhoea 19 %, and malaria 11 %, but the major underlying cause is clearly malnutrition.

The health service delivery system in Jayawijaya follows the model used throughout Indonesia. The District Health Office (DHO) administers the government program through a number of community health centres (puskesmas), which are run by doctors, if available, nurses, and nurses aids/auxiliaries, known as mantris. In some areas, particularly where the population is scattered, there may also be sub-health centres or clinics. These are generally attended by nurses and mantris, but not doctors.

Health services reach into the village through the mantris and through village health volunteers or 'kader' (cadre). Together with these cadres and/or women from the PKK the mantris run the village posyandu, or clinic, theoretically at least monthly. The posyandu focuses on the health of pregnant and lactating women and the immunisation of under-fives but it is also involved in mobilising community participation in village development activities.

In Jayawijaya there are critical gaps in the health delivery system. Currently, the district has one hospital with 100 beds; 15 health centres with a doctor in the 13 subdistricts. Usually each health centre has 2 to 6 sub health centres, 2 to 20 health posts and 6 to 100 integrated village health posts. Both health centres and sub-health centres are unevenly spread, however. Health centres in Jayawijaya tend to be concentrated around Wamena and other smaller urban centres. There are many remote, outlying villages which have no access to health services (neither health centres nor clinics) and there are pockets of poorly serviced areas throughout the district.

There is often a rapid turnover of medical staff in rural areas because of the difficult conditions and lack of services. The supply of cheap, good quality medicine and basic equipment is a constant problem as is the lack of cold chain equipment and sterile vaccination equipment.

Christian missions, which have began operating in Jayawijaya since 1953, help fill some of the gaps in the government health service. There are two mission hospitals, at Pit River and at Anguruk; 7 large health posts and approximately 150 village health posts. The missions maintain 11 registered nurses, 250 nurses aids/auxiliaries or mantris, and approximately 600 village health volunteers.

Even where they are present, health centres and clinics are often ineffective. This is often due to problems outside the control of the centre and its personnel, such as lack of communication and transport infrastructure. Getting to a health centre can be particularly difficult for women, who are less able to be away from home than men. Low income levels in some communities make community medical financing very difficult; lack of clean water or other primary preventative measures make curative routines ineffective; supervision is poor; and most importantly, in many communities only a few people understand the principles of basic health and nutrition, which leads to poor compliance patterns and the absence of community participation in health schemes.

Although health problems and inadequate health services are common throughout the district, they are particularly severe at Kobakma, which was chosen as a priority area for the project in its first phase. Kobakma is a remote administration (desa) in the north of the Bokondini sub-district and has few medical services. There are only two village health workers for approximately 5,000 people and outside medical care is equivalent to one day every 3 months. Malaria is rife, with more than 40 percent of children having enlarged spleens, malnutrition is severe, and the lack of a clean water supply aggravates the problem of communicable diseases.

1.2 PROJECT ORIGIN

The original project proposal was generated in response to AIDAB's call for submissions focused on Women and Their Children's Health (WATCH). World Vision International in Indonesia (WVII) identified the target population and suggested a general approach. The project was located in Jayawijaya for two reasons:

- The district had been identified as an area of special need by the Indonesian

government; and

- It was an area where WVII had worked intensively in the past and had established a network of contacts and working relationships.

Drawing on the development expertise and local knowledge of WVII staff based in Irian Jaya, a feasibility team, with members from World Vision Australia (WVA), met to develop the outline for a women's health project in June 1989. The outline was approved by the appraisal panel for AIDAB's WATCH Program in December 1989 and WVA was invited to submit a detailed project design.

A design was submitted under the WATCH program in April 1990. As a result of AIDAB's appraisal of the Design Document, WVA was asked to undertake further design work and a revised design was submitted in October 1990. The Appraisal by the AIDAB post in Jakarta in December 1990 made it apparent that the project was to be a pilot project under Australia's bilateral development program with the Government of Indonesia (GOI). Although funding would be sourced to WATCH funds, administration of the project would be carried out by the Indonesia desk and be administered under bilateral terms.

The project received its first tranche of funding in June 1991. However, the project did not really get under way until November 1991 when all the staff had arrived. The opening ceremony for the project was held on 12 December 1991 and was attended by the Governor, senior officials from the Department of Health in Jakarta and other government representatives. Other details of the project's progress are related in following sections.

The proposal for an extension to the Jayawijaya WATCH Project stems from the fact that for the project to accomplish its objectives more time is needed. A review of the project was conducted by Dr Michael Dibley, an Australian epidemiologist/nutritionist working at Gadjah Mada University in Yogyakarta, in March 1994. He concluded that:

The main elements of the WATCH project strategy appear to offer an appropriate approach to developing PHC for highland communities in Irian Jaya. The pace of change in the highland communities of Irian Jaya is slow and project designs and policy makers should recognise the need for gradual but sustained implementation of community based health development project. It is therefore strongly recommended that the project be extended for a further 3 years in order to refine the approach to developing a packet of community development, gender role change and health care interventions for highland communities in Irian Jaya and to document the impact of the program on the health and nutrition of women and children.

1.2.1 AIDAB Country Program Perspective

In 1989 Australia funded a health sector study which recommended a project to upgrade community health activities in Irian Jaya. This was intended to be a large-scale project of

assistance to the province but due to budget constraints in the Australian Bilateral Development Cooperation Program with Indonesia it is unlikely to proceed before the 1993/94 financial year.

The official record of the annual high level consultations on development cooperation held in Canberra in August 1990 noted that there was an opportunity to commence work on a major health initiative in Irian Jaya using separate AIDAB funds allocated for NGO activities. Such an approach was thought to be suitable provided it did not distort the objectives of the main bilateral program.

Current indications are that although the Australian government is still committed to the eastern areas of Indonesia plans to extend the health commitment to the remainder of Irian Jaya will not be realised. One reason for this is that other funding agencies such as the World Bank and UNDP have begun activity within other districts in Irian Jaya.

This extension provides an opportunity to consolidate the impact of the initial AIDAB commitment to Irian Jaya and to the health sector. It also provides an opportunity to consolidate the innovative approaches undertaken by AIDAB in conjunction with the Department of Health.

1.2.2 Description of Existing Project

A New Approach

WATCH has been a testing ground for new approaches. It has seen the combination of the following factors:

- A multi sector project focussed primarily on health.
- Pilot project for a new approach/model of PHC.
- A bilateral project using an NGO as implementer.

A Comprehensive Health Care Approach

During the 1970's and 1980's Indonesia successfully developed integrated village primary health programs in Java, Bali and Sumatra. The temptation has been for health planners to try and replicate these models in Irian Jaya. This temptation should be resisted because the culture, society and ecology of Irian Jaya are so vastly different from the inner Indonesian islands.

Various studies have found that a large percentage of diseases in underdeveloped countries derive from socio-economic conditions. The factors which affect disease include:

- Nutrition, water, sanitation, housing, education, gender differences and access to health facilities.

The underlying factor which affects these factors is the income of a household. The income of a household itself relates to the distribution of political power.

A health strategy which attempts to reverse and short-circuit the historical sequence of moving from improvements in nutrition through stages of water supply and sanitation to medicine, through an exclusive reliance on curative medicine will bring down death rates but will not ensure improvement in health.

This situation existed in Tiom in the project area. For more than 2 decades a strong selective, as opposed to comprehensive, PHC approach was conducted. There was an improvement in the infant mortality rate from around 250 per thousand to around 90 per thousand live births. The assumption was that if lives were saved there would be a better quality of life. However the nutritional status of the children and women decreased. There were a range of reasons for this.

Firstly, children were saved who would otherwise have died. In former times unhealthy children would have died. Sometimes this led to the practice of choosing only one child from twins to save one of the children. By saving children who would have died, there were more children who were unfit for the environment and created more mouths to be fed.

Secondly, as the population increased, men opened more gardens but the gardens were moved further out of the villages and it was the women who worked and walked longer hours. Women's workload increased and affected the health of the women. The result was the deterioration of quality of life for women and children.

Thirdly, technology based approaches to progress are dependent not only on the supply and services of the technology but also on an educated and politically aware population who can use and access the service infrastructure. Technological change in the health sector thus cannot be viewed outside the context of these broader socio-economic concerns.

The WATCH project has thus attempted to formulate the right mix for a comprehensive PHC approach that will address the root causes of ill health. These have been determined as lack of community understanding, gender relationship imbalance, the poor quality of health services and lack of income.

WATCH Objectives

The Project Implementation Document (PID) for the Jayawijaya WATCH Project listed four objectives:

- *To extend and improve the existing health services by increasing the number and quality of trained nurses, nurse aids and auxiliaries, especially the number of women in these categories.*

This objective was addressed by building a dormitory and classrooms for the nurse and midwife training school in Wamena. The quality of instruction at the school was improved by modifying the curriculum to address local problems and

by providing additional teaching aids and materials. The skills and knowledge of the 'mantris' or paramedics who are stationed at many of the remote sub health centres were upgraded through a correspondence learning program. In service training was provided for community health centre staff on the appropriate case management of the three primary diseases that cause infant deaths.

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

Two main streams of health sector activities were supported by the project. The first was to improve a set of essential clinical services for women and children at the community level and the second was to develop community based preventive activities directed at the major causes of infant and child deaths.

The Expanded Programme of Immunization (EPI) program was strengthened by improving the cold chain, through the provision of 3 solar fridges and 195 vaccine carriers, and by training over 200 immunisation field workers. TBAs and mantris were given intensive training on safe delivery procedures and indications for referral. In one subdistrict, Kobakma, a number of strategies for controlling malaria were evaluated. A number of activities were implemented to improve sanitation and to provide health and nutrition education for the community.

Annual conferences of key community leaders, district health personnel (both government and missions) and WATCH staff were conducted to enhance communication between the various groups providing services and to identify key MCH needs in the district. An intensive one week training program was conducted on case management and community health activities for mantris from sub-health centres throughout the district. In one area, Kobakma, the work of the mantris was subsequently supervised and the effectiveness of the training evaluated.

A BLS was conducted to collect information about the health and nutritional status of the communities selected for project activities. The routine surveillance system was supported by simplifying the data collection forms and computerising data processing and analysis at the DHO.

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

The WID Coordinator conducted a survey of women's needs and status but the results of the survey and the experience of the team made it clear that a WID approach was not adequate to address the significant imbalance in gender roles as the result of social change due to outside contact.

The project team identified a more appropriate and innovative approach to gender in development activities for communities in the district. This has been the development of a Gender and Development (GAD) module. Community based

training materials have been prepared and piloted. However the GAD education and awareness program has yet to be implemented at a field level.

- *To facilitate village-based initiatives which address the major constraints which affect the health of women and their children's health.*

The project identified and trained village community development workers (CDWs) to promote the formation of village groups. Over 150 groups have been formed in about 40% of villages from all regions of the Jayawijaya district. These groups have identified local priorities and started to implement income generating activities (IGAs), infrastructure projects and agricultural and animal husbandry activities to provide new food sources for the community.

The project has attempted to involve women in the formation and running of these community groups. In the activities introduced the project has attempted to identify work that can be done by men. The infrastructure projects have included the improvement of roads and paths, the building of bridges and clean water supplies. Again these activities have aimed to reduce the work load for women and to provide work for men. Finally, these groups provide the basis for creating a link between the community and the formal health sector.

The importance of the combined effect of the development of groups under the WID/GAD component and the CD component is that these groups become an entry point for the development of health groups that will take on basic health services and lead to self maintained drug dispensaries, health insurance schemes etc.

Strengths and Weaknesses of the Current Project

The AIDAB consultant, Dr Michael Dibley, identified strengths and weaknesses in the project. The full list can be read in Annexe 3.1. A summary of these is listed below:

Strengths

- A highly motivated and well organised team.
- The project has a well developed strategy to integrate community development and health interventions aimed at the key problems related to poor MCH.
- Formulation of an innovative approach to gender in development which recognises gender imbalance as a factor influencing poor MCH.
- A significant impact on district health services by acting as a catalyst for local policy changes.
- Using an NGO has provided an effective and flexible approach to multi sector project implementation.
- The project is perceived as a potential model for PHC and community development in the highland regions of Irian Jaya.

Weaknesses

- The project design was too ambitious in proposing to cover almost all villages in the district.
- The project design was too ambitious in the range of interventions.
- The project design failed to include an adequate community preparation phase for village activities.
- The design does not have a strategy to progressively increase/transfer managerial involvement to local Irianese.
- Nutrition interventions are not well developed.
- There are insufficient field staff.
- The lack of technical consultants weakened some of the activities.
- The monitoring and evaluation needs further development.
- The Project Advisory Committee does not effectively link the WATCH project with other community development programs in the district.

1.2.3 Description of Organizational Links

The existing project operates with both the government department of health as well as many different NGOs. The key partner agency is the DHO. The District Health Officer is the counterpart Project Manager (PM) who approves all initiatives and allocates DHO resources to assist or undertake activities. Health programs will be run throughout Jayawijaya based from the 13 government puskesmas and the 7 yayasan (mission based) puskesmas.

Most church groups have their own NGO which conducts a range of community based activities. These are the key groups with whom to work as most, if not all, administrative and leadership structures operate through them. WVII has an ongoing relationship with most of these organizations in the implementation of past and existing projects. WATCH/WVII will work in collaboration with the following organizations/community groups for the purposes of the project:

Bethesda Bethesda Health Foundation (Yayasan Kesehatan Bethesda - YKB) formed in 1984 in Irian Jaya from government linking with eight health oriented NGOs, mostly church or mission based. It was primarily involved in logistical support but has expanded its role to include the Health Workers Training Centre at Wamena amongst other activities. Dr Budi Subianto has been the Chairman of the Board of Bethesda.

Yapelbap IRJA The Australian Baptist Mission Society were pioneers in PHC for Irian Jaya. Yapelbap IRJA is its yayasan arm. They continue to have a role in PHC training.

Yapekin The Christian Missionary Alliance is another mission agency with a strong link to Irian Jaya and Yapekin is its yayasan (Foundation) arm. Again, pastors are significant community leaders.

Yapelin GIDI (Gereja Injili di Indonesia) is the Evangelical Church of

Indonesia and Yapelin is its yayasan or social foundation arm covering a number of mission organizations. Many Dani people are members of this church and the pastors play a significant role as community leaders.

The Asia Pacific Christian Mission (APCM) has been operating in Irian Jaya for over 25 years. A number of government hospitals and clinics were established by the mission and many of the staff have been trained by the mission. APCM still provides medical training and support services. This mission's work falls under the auspices of Yapelin.

Kingmi The project is also working with the Catholic church and its yayasan arm, Kingmi. This church works mainly in the eastern area and some parts of the Baliem valley.

The existing project has also forged substantial links with government departments. The following groups have been associated with the project, mainly in terms of training and advice:

- Agriculture.
- Animal husbandry.
- Fisheries.
- Cooperatives.
- Village development.
- PKK (Bureau of Women's Affairs).
- LIPI (National Academy of Sciences).
- BPPT (Agency for Application and Development of Technology).

1.3 SITUATIONAL ANALYSIS

The root causes of the problems facing the project in Jayawijaya have been identified as lack of community understanding, gender relationship imbalance, difficult environment, the poor quality of health services and lack of income. A chart setting out the connection between of these problems and poor health can be seen at Annexe 2.1.

Income is now very important. There are high expectations among the communities for many things. 'Modernisation' has taught the people to carry these expectations. The disparity between expectation and realisation of income of the community is worsening. This situation has the potential to be dangerous.

Although income is important, gender relationship is crucial 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 other hand, greater participation in food production and income generation may increase women's work load to the 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 labour involved may in itself be so heavy that it is detrimental to the woman's health. Case studies have shown that a woman's energy expenditure over a given period is higher than that of men.

Due to their work load, women's time is limited and becomes a constraint on women participating in any activity apart from their primary tasks in household work and food related work. In a typical non-literate society, being informed and having decision making power 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.

Some specific issues are worth canvassing:

Chronic Malnutrition

The standard medical diagnosis of malnutrition is to measure body weight against the age of children and adults. Indonesian growth charts have a red line to delineate the measurement under which children are regarded as malnourished. Food supplementation is thus recommended.

The WATCH project has found that in the highlands measuring body weight against age only is not a true indicator of malnutrition. A better indicator is to measure height as well. Thus many children who would otherwise have been below the red line on the standard growth charts actually have body weights proportional to their height and therefore do not need food supplementation.

However, food supplementation should be given to children who have low weight for height, or are 'wasted'. This condition would be below 60% of a normal proportion or below -2 in a standard deviation curve of weight for height. The problem however, is to find a reliable indicator of this proportion. The mid upper arm circumference has, to date, provided sufficient reliable data to develop a height chart for the highlands. This still needs further testing.

A second problem relates to the indicators of 'poorly nourished foetus'. The standard measurement on the national mothers card is based on height with no information for women under 145 cm. However, the average height of women in the highlands is under 145 cm tall. WATCH has therefore produced a new mothers card which uses a fundal height measurement for growth of the foetus and indicating the mothers health.

A related issue is that for those women who are under the national line, food supplementation is recommended. To do this however runs the risk of increasing obstructed labour as the foetus may grow too strongly for the woman's size. Food supplementation is recommended for the third trimester of pregnancy.

In addition it is recommended that special foods be given to babies after five months as breast milk declines after six months. The WATCH project has attempted two things: firstly, to find a suitable high density food supplement such as a sweet potato flour porridge and secondly, to encourage mothers to feed their babies more both in terms of frequency and quantity.

It should be noted that although there is a role for feeding programs for the severely malnourished, the role of the project is to monitor, detect and alert the Department of Social Affairs whose role it is to conduct feeding programs.

Bidan Desa Scheme

A 'bidan' is a midwife. In the mainstream health system, to qualify for training as a bidan a person needs to have completed SMA. In 1987, the Indonesian government instituted a scheme to provide bidans for each puskesmas (subdistrict health centre) throughout the country. In Wamena six to ten girls have been trained each year under this program. They have now been able to staff the hospitals and the health centres. Salary from the government is only available at the puskesmas level. It is therefore uncommon to find bidans at desa level.

To try and provide midwifery services at the desa level the government is introducing the bidan desa scheme whereby every desa in Indonesia will have a bidan or bidan desa by 1996. This program will take students who have reached SMP (junior high school). The bidan desa will also receive salary from the government but will be on 3 year contracts. They will then be expected to go into private practice. This possibility is extremely unlikely in the Irian Jaya highlands because the income of the local population is so low and because the birth rate is below the national average.

One method of addressing this situation and keeping trained midwives in the desas after 1996 is to introduce community development activities that are income generating. On the one hand the community could generate income and contribute to a form of insurance fund from which to pay the midwife. On the other hand the midwife may be able to participate in the activities and generate her own income. With these opportunities combined there may be sufficient incentive for the midwife to stay in the desa.

Obstructive Labour

Many of the women have a relatively small pelvis. Due to the improvement in their understanding and health as they prepare for childbirth they are carrying a well nourished foetus. The foetus is then often large. This can result in obstructive labour with the possible need to cut the pubic bone to ease the pressure on the mother. Expectant mothers are rarely referred to a higher level medical post due to the lack of a protocol. This problem has been a significant contributor to a high mortality rate among women.

The way this problem can be addressed is to ensure there is an effective referral system so that pregnant women with large foetus' can be identified early and can be sent to the

nearest puskesmas where a doctor can operate if necessary. This however assumes that there are midwives available who are skilled enough to diagnose the condition.

Health Targets

The topography of Irian Jaya is such that to reach desired targets of puskesmas and posyandu construction, the health budget is severely constrained for appropriate medical care. Secondly, most doctors and some other medical staff are usually outsiders who do not understand cultural norms and are not committed to the people in terms of their length of stay. The high turnover rate thus results in a lack of corporate memory and dysfunction in each post with regular staff turnover.

The Use of Cadres

Cadres are usually community volunteers who have sometimes received some basic training in health or community organising. Cadres may belong to church groups, community groups, the government or in this case be working specifically alongside the WATCH project. They are the ones who are designated as the leaders or facilitators after an activity has been run and the trainers have left the village.

Sometimes the cadres are trained specifically for certain tasks. Sometimes they are paid for their duties, especially if they are required to fulfil tasks for the training entity. This can however be quite problematic because in community development terms it is those communities who are motivated to make the contributions to activities themselves that usually move ahead. Paying workers creates a dependency and an individualism amongst villagers.

The WATCH project has worked with cadres who are working with other groups and has designated a few to work specifically on WATCH activities. The extension will prove problematic as the project wants to hand over more responsibility to cadres but has to find a way of rewarding those of whom tasks are demanded. It will be appropriate to reward some with cash but others will need to be rewarded in kind with either a gift, such as a jacket, or with seeds/animals to be used for production.

1.4 CONSTRAINTS AND ASSUMPTIONS

1.4.1 Local People's Attitudes and Expectations

The education level of the people is very low. In some villages and centres it is possible to find many people who cannot count. This is in part due to cultural systems that do not view numbers and age in the same way and an educational system not geared to adapt to these constraints. The prospects of developing a reliable statistical base with local staff providing the base information has potential for severe limitations. Moreover the difficulty in moving around Jayawijaya is hardly an inducement to monitor the health system thoroughly.

Many people in the highlands also do not understand the nature of illness. They may not

take particular notice if a health worker points out that their child is thin because this is not of particular consequence. Methods need to be discerned to get health messages through to the community so that they understand basic health concepts and act on them.

To participate in the health system is very costly. These people have little or no money and their potential for raising money is limited.

A further assumption is that communities will take up more appropriate health behaviour when the system is in place. In Jayawijaya, the predominant approach to life is through the corporate community. The WATCH project operates on the assumption that it is unlikely that any other method will ensure understanding of principles and sustainable changes of behaviour. The concept of change is one that has not been part of Irian Jaya highland culture for centuries. Yet, in the last forty years they have been exposed to a technological culture that has taken other parts of the world centuries to develop. Therefore change, including that of health behaviour, needs to be undertaken in a systematic way to ensure the highlanders are eased into a rapidly encroaching world without their cultural system destroyed.

Language can also be a constraint. Although the official national language is Bahasa Indonesia most of the central highlanders of Irian Jaya speak only their native tongue. Most church leaders or government employees speak Indonesian and can facilitate translation but the fact that even neighbouring valleys are likely to have different languages accentuates the language difficulties.

The isolation of the highlands makes the marketing of goods difficult and expensive. There are opportunities to generate income from agricultural produce and also to add value to some products, ideas which the project is pursuing. However, getting produce to Wamena can be time consuming and expensive and flying goods out is even more expensive and problematic.

The culture of the local people is also a constraint to development. This can be from the health perspective or from the motivational perspective. The cultural patterns are centuries old and often only higher levels of income will allow the local people to change some of their practices. A good example of this is the issue of healthy houses where new designs of houses (Honais) have been built that address the respiratory problem but they do not offer solutions to the production of heat. Blankets and clothing would do that but many of the people cannot afford these items. Furthermore, some government programs have constructed wooden houses typical of other parts of Indonesia but the local people have not been properly prepared: they have not been educated how to use these houses; a certain level of income is assumed for furnishing and heating; and these houses are built away from traditionally owned land.

A further example of cultural constraints is the place of the pig in these societies. To reduce the workload of feeding, the pigs are not kept in enclosures. They therefore pollute the streams, generate mud and spread disease, especially worms. The main disease is cysticercosis which results from the lodging of the cyst of the tapeworm in the intestinal system of the pig. This is passed on to the community as they come into contact with the

pig excrement. The spread of the disease is exacerbated during feasts when pigs are not fully cooked and worms survive the cooking process. All communities have learnt how to protect their gardens from animals by building enclosures for them but they need to learn how to enclose their pigs to protect themselves.

2. PROJECT DESCRIPTION AND IMPLEMENTATION

2.1 OBJECTIVES

Goal

The goal of the project is to improve the health and nutritional status of women and children in Jayawijaya district, Irian Jaya.

Purpose

The purpose of the project is to develop an appropriate and integrated PHC model for the remote and highland regions of Irian Jaya.

2.2 DEVELOPMENT STRATEGY

2.2.1 Lessons Learned from Similar Activities

The April 1994 report of the AIDAB consultant, Dr Michael Dibley, made the following observations:

- **An integrated approach is essential for the development of primary health care services in Irian Jaya.** This approach will require community development activities that help alleviate poverty, develop community organizations and community leadership. It also requires adult education activities to raise awareness within the community of the critical social issues that influence poverty and health; in the case of the highlands of Irian Jaya, one of these key issues is the imbalance in gender roles. At the same time activities are needed in the formal health sector to make essential clinical services and preventive services as efficient and effective as possible. Finally, a strategy is needed to link the community to the formal health care sector. This might include overcoming cultural and social barriers to access of services or providing services directly in communities. The WATCH project has demonstrated that this integrated approach is essential especially in resource poor communities. The delivery of clinical services and preventive technologies alone will not work in Irian Jaya.

- **A non-government community development organization can effectively manage an integrated primary health care project.** The WATCH project has demonstrated that an NGO or LSM can provide flexible management for an integrated PHC project. The PM has the role of coordinating the various resources needed to improve community health. The goal is not to replace government services but to make them more effective by stimulating micro-policy changes, training staff of government agencies in new skills and influencing their approach to working in the community. The LSM brings experience and close contacts in the local community. It should be able to work with other local organizations as partners in developing community groups and leading these groups to identify their needs. Finally, the PM must act as a bridge between the community and government services. It [the LSM] has the role of working out to create effective links between formal health care services and other government services and the community.

- **The imbalance in gender relationships in the highland communities is a significant contributor to the poor health of women and children.** The WATCH project has highlighted the importance of gender role imbalance as a barrier to the community development process. Women in the highlands are overworked, they have low levels of educational achievement, they have limited roles in community organizations and they are poorly nourished. The traditional role of men as warriors has been removed and they have yet to develop new productive social roles. These social circumstances provide many barriers for women to effectively participate in community development and community health interventions. The design of future community development and health projects will need to address these gender role issues.

- **Projects that aim to develop service delivery models need to have flexible designs and adequate resources for evaluation and documentation.** The WATCH project has experienced difficulties in both these areas.

Firstly, the classical planning approach implied in AIDAB project log-frames assumes that the expected outputs from a set of inputs can be predicted with a high degree of certainty and that these can be measured by predetermined indicators. These assumptions work well with well established technologies that involve little interaction with the community. However, when bringing new health technologies to communities it can be hard to predict which approach will work and which technologies will be acceptable. In these circumstances a process documentation and learning approach is more appropriate as a model for managing projects. This management method monitors activities and client responses to determine which activities work, how to modify activities to make them more effective and how to reallocate resources based on this information. This approach can be accommodated within a log-frame provided there is a willingness to accept periodic changes.

Secondly, when developing a service delivery model the project design must include adequate resources for technical inputs, monitoring and evaluation of project activities. It is crucial that these special investments produce sound models that are well documented to assist in the formulation of informed public policies and appropriate resource allocations from future routine GOI budgets.

2.2.2 Project Strategy

The project strategy is to implement an integrated multi sector program covering the primary health problems in the district of Jayawijaya. These are coverage of health services, nutrition, gender relationships and poverty. Annexe 2.2 explains the relationship of these components in diagrammatic format.

The importance of this diagram is that it shows that by the formation of village groups, conducting gender awareness programs, IGAs and improving village level health knowledge and skills we can address the major problems listed above that relate to the general health of the women and children of the district.

However at the level of service providers in the district there are still deficiencies, even with the existence of the WATCH project providing a range of inputs over the last two and a half years. Annexes 2.3 to 2.5 show the range of problems and the ways in which WATCH is attempting to address them. These ways include both prevention and case management protocols.

What will be as important in this phase of the project is that the level of training and implementation of protocols developed in the first phase will be evaluated carefully and documented to determine if changes need to be made to the protocols or further training is needed. If further training is needed, this will be carried out in conjunction with the (DHO).

The way this will be done is for the monitoring and evaluation team to collect data, often more qualitative, from areas where there are WATCH activities. The health data will be able to make two distinctions: firstly, if in a given area there are deficiencies in the data collected by the government system to illustrate the health status and/or trends; and secondly, whether in that given area WATCH is making a difference to the health data compared to areas where WATCH is not operational.

The first phase of the WATCH project covered large areas of Jayawijaya. The extension project will target areas more closely based on the experience so far. In areas where there is more need or the community have not grasped the concepts of change so quickly more time will be spent with them helping them to understand more clearly what choices they have. In other areas where understanding has emerged more rapidly there will be the opportunity to expand the possibilities. These areas could then become models for other areas and be the subject of inter village visits.

2.3 PROJECT FOCUS

2.3.1 Specific Location and Description of Target Area

The existing project has focussed on centres throughout the district of Jayawijaya, including centres in the eastern sector of the district. Arguments have been advanced for activities in the extension to:

- a) Concentrate on areas of greater need;
- b) Concentrate on areas where we could capitalise on greater motivation and therefore have greater impact; or
- c) Deliver a broader coverage of the whole district.

Arguments against moving into new areas have been that this would not consolidate existing activities and would need to be in line with government initiatives for any sustainable activity to be conducted. To concentrate only on areas of need is expensive because these areas, by definition, are more remote, therefore requiring more supervision, time and expense. Moreover, there is no guarantee that the government could continue to service these areas adequately. To concentrate only on areas of higher impact would leave areas of need stranded and devalued.

The most appropriate strategy is to concentrate on a multi focus approach whereby an area is covered which contains both needy and high impact areas.

The extension project will work in the following eleven areas: Wamena, Mamit, Kobakma, Ninia, Korupun, Holuwon, Tangma, Oksibil, Kiriwok, Mapnduma and Mbua. Each of these centres will include one or two other sub-centres in its area. (Please see the maps at the front of the document).

It is difficult to define these areas more specifically. As the AIDAB review notes (first point under 'Weaknesses'), the number of villages in the district was altered by government pronouncement after the project had started. However, even camat (subdistrict) level officials are unclear about the status of the villages or hamlets in their own area. It is often difficult to distinguish what constitutes a hamlet and a village, or in Indonesian, a kampung or a desa. The government criteria does not seem to rest on either land area or population although the latter would be closer to the reality.

The criteria for defining a centre in this project are an airstrip and a relationship with the church or a cadre. Each centre or sub-centre has about five to ten hamlets associated with it with which there is associated project activity. In most cases each of these centres or sub-centres has a cadre who is linked to the project. This accounts for up to 270 'villages' being involved with the project throughout the district.

2.3.2 Intended Beneficiaries

It is fair to say that all the people of Jayawijaya will be affected by this project. This is because the level of activity has penetrated all levels of the health system for the district. However, the people who will have the greatest contact with the project personnel and activities will be the people in the designated hamlets/villages where activities will be conducted.

Using the criteria above for the definition of centres, we estimate that there are about 100 families in each of the hamlets. Using a factor of 5 for an average sized family, we estimate the project to be affecting 135,000 people in the district.

2.4 EXPECTED OUTPUTS/COMPONENTS

There are 6 outputs planned for the extension project:

1) To Deliver Effective Formal Health System Services

This program will continue the development of case management protocols that began in the existing project. Current protocols will be tested and evaluated and, if necessary, medical personnel retrained. In addition new and /or integrated protocols will be developed for high level mortality/morbidity treatments. A nutrition education and feeding program will be included in this output.

2) *To Implement a Health Promotion and Prevention Program*

This program will be directed at the small hamlet and village level community groups and will be attempting to help community members establish health groups and establish identified basic level behaviours and health services. The main activities will centre on basic hygiene behaviours, malaria prevention, clean water supply and use of latrines.

3) *To Implement a Gender Awareness and Community Development Program*

This objective is designed to address the root causes of health deficiency in the communities as described in sections above. Thus community groups will be enhanced, gender imbalance will be addressed through the module developed in the existing project and a range of infrastructure and income generation activities will be undertaken.

4) *To Develop and Implement a Special Training Program for Staff and Local People*

The report of the AIDAB review recommended further training to assist the learning process of villagers and staff. This objective will provide the opportunity for meetings, trainings, visits and exchanges to consolidate the project activities.

5) *To Implement a Monitoring and Evaluation Program*

The report of the AIDAB review recommended a stronger emphasis on monitoring and evaluation. This objective will strengthen the monitoring and evaluation activities by designing and implementing a program that will provide scientifically based figures that will be recognised internationally. Assistance will be received from the Gadjah Mada University epidemiology program. The project activities and structure can then be written up and analysed more systematically.

6) *To Implement a Management Coordinating System*

Communication will be the key to this output. The management will ensure that efficient logistical support will be given to all staff to ensure that communication is available, especially for planning and reporting. In addition the links with the government administration will be strengthened, especially at the kabupaten and kecamatan levels, in order to support policy initiatives resulting from project findings.

2.5 PROJECT ACTIVITIES

Objective 1: Health System Services

1.1 Monitoring of Case Management Protocols for the 3 Common Diseases in Under 5s

Annexe 2.3 shows the five highest killers of babies and infants in Jayawijaya. Statistics gathered from project activities in 1993 show that the level of mortality amongst babies up to age 1 year is 106.1 deaths per thousand live births. This compares to a rate of 5 deaths per thousand for infants between the ages of 1 and 5 and a rate of 3.88 deaths per thousand in the population over 5 years old.

The existing project developed protocols for ARI/pneumonia, diarrhoea and malaria which are the three highest killers of babies and infants in Jayawijaya. The implementation of these protocols will be monitored closely to assess whether the medical staff are in fact following the protocols and to assess the need for further training. The charts that have been developed as part of the protocol procedure will also be assessed to determine whether they are clearly understood.

Sample groups will be tested in all 11 project centres. These will be carried out by the Health Coordinator (HC) in conjunction with staff from the (DHO) and the M&E team. The level of need will determine whether further training will be carried out locally or whether a course in Wamena would be more effective.

1.2 Develop an Integrated Case Management Protocol for Sick Children

Although case management protocols have been developed for individual diseases, further work will be done on protocols for children. This is so that general standards of treatment can be developed and integrated.

Some of the issues to be addressed include:

- Use of cotrimoxazole, a drug used to treat pneumonia. This is claimed to be an effective drug and although relatively cheap is not easily available from the government due to it being low in budgetary priorities;
- There are implications for treatment using drugs as these are not always available due to low priorities from the government, logistical reasons or the cost makes them out of reach to villagers;
- The need for injections in treatment. This issue has taken on a new significance due to the arrival of AIDS in the highlands;
- The need to identify the characteristics of high risk children and what measures can be taken for their referral and treatment.

The development of such a protocol, although necessary, is ambitious. The World Health Organization (WHO) is currently without an integrated protocol for infant diseases and is currently conducting considerable research, together with the United Nations

International Children's Emergency Fund (UNICEF), to develop such a protocol.

1.3 Develop a Malnutrition Case Management Protocol

Malnutrition is a major problem in the highlands. However there is no protocol for diagnosis of serious stages of this problem nor is there a guide for appropriate treatment. The AIDAB review found that the levels of malnutrition being recorded in the BLS would have been classified as similar to that seen in refugee camps yet there was no strategy for a feeding program.

Again, this protocol will need to be discussed by all medical personnel and ratified by the government agencies.

1.4 Continue the Development of a Suitable Food Supplement for Children

Providing a sufficient variety of food for children as well as adults is one of the important objectives of this project. The existing project has introduced a range of activities to supplement food supplies, eg cakes from sweet potato flour, soya bean and peanuts; soya milk, bean curd and mixed vegetable soup. Strategies for growing more vegetables and fruit have also been introduced, eg carrots, different varieties of beans and potatoes, papaya, citrus fruits. Work is continuing on the development of energy density food, fermented food and processed foods.

1.5 Promote and Evaluate Sweet Potato Powder as a Super Oralyte

Sweet potato powder/flour has been trialled as both a food supplement and as a replacement for super oralyte. There is little naturally occurring salt or sugar sources but the sweet potato has both these qualities needed for an oralyte solution, taken when experiencing diarrhoea or dysentery. Initial trials suggest that this form of sweet potato is working well and could be introduced throughout the highlands.

It will be the role of the HC and Nutritionist to promote this strategy.

1.6 Develop and Implement a Nutrition Education Program

Nutritional status is a problem for both women and children. For women, they do not eat enough times a day to sustain their workload and they need to increase their intake during the third trimester of pregnancy. Secondly, they do not eat food of sufficient nutritional quality which can provide their bodies with protection from infection and provide the energy base for their workload.

A form of nutrition education has been implemented in the existing project alongside the introduction of new plants, foods and food processes. However, the recommendations of the AIDAB review stressed that the extension project should refine and formalise the activities currently being undertaken under nutrition. This program will need to be consistent with the malnutrition protocol being developed and become part of the program of the subdistrict health centres.

1.7 Monitor the Implementation of TBA Training

Just over 300 TBAs have been trained in approaches to high risk pregnancies, assistance in delivery, measuring birth weight, providing antenatal care and using TBA cards for administration. Protocols for monitoring and supervising these TBAs and measuring the effect of their training have been formulated but not used as yet.

Just as with the monitoring of protocols for under 5s above, assessments will be made on the need for further training and based on the need, the location of that training.

1.8 Develop and Implement Effective Case Management Protocols for High Risk Pregnancies

The ability of these TBAs to implement the training accurately is critical to the development of future protocols for high risk pregnancy. These new protocols will involve more complex decisions and could have far greater implications for the lives, or deaths, of pregnant women. The education level of many of these TBAs is not high, so it is critical to develop materials that are appropriate for their level of understanding.

Again, protocols will need to be ratified by relevant authorities.

Objective 2: Community Health Program

2.1 Implement a Community Health Education Program

Many of the highlanders have not set high standards of personal hygiene such as washing of their hands, bodies and clothes. Latrines are rare or not used properly and often there is not an accessible supply of clean water. This can therefore lead to disease and sickness.

At another level further education is needed for instruction in breastfeeding, growth monitoring, child nutrition and prevention of diarrhoeal dehydration and vitamin deficiency. These issues are as of much concern for mothers and children as for health workers.

A pilot newsletter is currently being trialled throughout the district. This newsletter needs to be evaluated as to whether it is an effective medium in such a dispersed and inaccessible district. Some posters and charts have been supplied to most health posts and these will form a platform for reminding communities about health issues.

It will be the task of the HC to promote an education program amongst the health workers. The health workers will need to develop different strategies to get health messages across, whether it be going out with specific messages to individual hamlets or people or to provide advice when mothers and children come into the health centres or posyandus.

To date the project staff have been relying on a booklet produced by the Bethesda group, a

health oriented NGO working in the district. However, the project staff consider there is a need for the development of a more appropriate booklet featuring the linkages between good hygiene practices and good health.

2.2 Implement a Malaria Eradication Program and Prevention Program

The highland pattern of malaria reach is up to 1500m. Most treatment for malaria is clinical. This often puts it beyond the financial reach of the community. To date the biological control methods tested have not been successful. New options are being considered such as frogs and dragonflies but are not priority project concerns.

There are 2 strategies that may be of some assistance. Firstly, the use of impregnated bed nets. This has been found to reduce the mosquito attack rate to almost zero but it only applies to those living in houses, of which there are an increasing number. This strategy will be applied to all project centres where there is malaria.

The second method is the use of pyrethrum soap. This will act as a kind of insect repellent. This assumes that community members will actually wash regularly and that they can afford to make or buy the soap. The community can be taught to make soap and if peanut production and processing develops, the peanut oil could be used in the soap making. Moreover the project has received and planted chrysanthemum bushes from which pyrethrum is extracted. Hopefully these can be planted throughout the highlands and be a source of pyrethrum for soap and nets.

The ideal however is to have a combination of both a good case management strategy and a personal prevention strategy.

Other forms of repellent may also be able to be used in the highlands. The Qinghaosu tree is the source of a traditional Chinese herb treatment for malaria. The tree has just been introduced into the highlands by the project. Papaya leaves have also been claimed to have preventive qualities.

2.4 Promote, and Assist in Supplying, the Use of Safe Water Supplies

To date three water supply facilities have been constructed in Wouma, Manda and Jita. These have all been ferro cement tanks where the project has supplied the cement but the cadres and community have had to provide the other materials and build the tank. In Manda, a pump is also being installed alongside the tank.

There are two major reasons for building the water supply facilities. Firstly, some areas do not have reliable sources of clean water. This is often because the source of the water is not close to the village and it is contaminated before it gets to the village location. It is therefore critical for them to pipe uncontaminated water and store it. Secondly, when the source of the water is far from the village. It is usually a woman's job to collect water and the further the distance from the village the greater the load on the women. Both factors contribute to poor health for the women.

Locations for building water supplies and styles of construction will depend on the willingness of the community to contribute, their understanding of the need, the nature of the source of the water and the geographic location. Some locations are also good sites for the application of mini hydro schemes which would provide electricity for a range of purposes for the community as well as being part of the water supply system. Mamit, Kanggime and Ninia are locations where these could be introduced.

2.5 Promote, and Assist in Supplying, the Use of Latrines

The lack of latrines in the villages around the highlands has meant that waste has been left where both people and animals have carried it by foot. This has continually contributed to the poor health of communities. Recently a survey conducted by the project found that cysticercosis was prevalent in the district and the PM campaigned in all the churches in the Grand Valley of the Baliem to construct latrines as a measure to combat the epidemic.

The project is encouraging the construction of 2 kinds of latrines: firstly, a ventilation improved pit (VIP) latrine model which does not require water and a flush model in areas where there is greater access to water. Some communities have built pit latrines, such as in Tangma, but they need to be introduced to better models of latrines.

A Blair VIP latrine has been built in Manda and preparations have been made for latrines in Kimbim, Pugima and Tiom. Progress is being made with this strategy as the pastor in Kurulu has indicated interest in constructing latrines for several public facilities such as the school, church and meeting hall.

Objective 3: Gender and Development

3.1 Organise the Establishment of Viable and Sustainable Community Groups

Annexe 2.2 shows how the development of village groups can lead to better health. Most highland people need to be educated to manage and understand change. The formation of groups with activities to be conducted can enable these groups to learn to accept new ideas and methods. The ability of the group to mobilise and progress can be readily assessed. This, however, does not mean that this transition is easy to achieve.

CDWs will work with the groups throughout the centres to develop their groups. Key processes in this development are understanding that change is inevitable, acceptance of new ideas, leadership and responsibility structures, mobilising community support, ability to continue activity without supervision, ability to introduce further ideas for activity, ability to initiate own ideas and conduct them without supervision. In addition to these processes group members need to learn technical skills and practice accountability. These skills could range from raising bees to using latrines.

Apart from bringing community members together to provide training, revolving grants have been a significant feature of community development. These grants are given in kind and groups given the opportunity to raise chickens or rabbits or grow crops. The mechanism is that they should give another person or group the same start as they were

given when their grant has prospered. Groups that have shown an ability to manage small grants have been introduced to new ideas such as bee keeping and artificial insemination for fish.

The ability of a group to develop through these stages will determine their ability to take up new concepts of health from basic hygiene through to simple health insurance and control of small drug dispensaries. Indeed, these groups are the key to better health for the communities; their failure will jeopardise the acceptance of this PHC model.

3.2 Train Cadres/Coordinators in the Gender Awareness and Application Modules

The existing project has seen the development of a significant data base of information on the role of women in highland society. It has been used to develop a module that will help women, and men, critique their roles. Draft modules have been presented to interested groups and consultants and a final product will have been produced by the end of the existing project.

The role of the GAD Coordinator will be to train women in how to use the module to raise awareness in their own communities and to search for some resolution. At least one woman from each centre will be given this training. In addition there will be inputs from the module in the community group training in 3.1 above. There will be opportunity to examine whether the module is actually working and to either improve the module or introduce a further stage.

The critical issue is how the women and the men will be able to reach some kind of understanding that will enable the women to lighten their workload and the men to take a greater share. Activities and plans will have to be decided by both.

The Low Sustainable Input and Sustainable Agriculture (LEISA) strategy covers both the need for reforestation but also an activity where men can find a more productive role. LEISA is basically terracing along contours, multi cropping, mulching and alley cropping. A short paper describing this method of agriculture is attached at Annexe 3.2.

This activity is being assisted by staff from BPPT and Dr Fred Rumawas, a specialist in Irian Jaya agriculture, from IPB (Bogor Institute of Agriculture). Dr Rumawas has supplied, and will continue to supply, seedlings, seeds and varieties of plants that could be used in the project.

The preparation of these contours and planting areas can be likened to the traditional men's role of opening up gardens that were worked by the women. The project's target is to involve men in as much of these LEISA activities as possible. If care for the animals and marketing the produce is added to their responsibilities there is hope that they will be more productive. A further benefit of this strategy is that these activities can occur close to the village housing. This means that the women will not have to go so far to the gardens to tend the crops.

3.3 Provide Infrastructure Support for Village Communities

One of the crucial functions of supporting the health system is to ensure that the community have access to it. In Irian Jaya access to any facilities, let alone health, are poor due to the mountainous terrain. The building of bridges and improvement of mountain paths are life saving activities both from the point of view of safety when crossing rivers and ravines and also in terms of getting to better treatment.

The existing project has participated in the construction of 14 bridges and a section of track in Oksibil that follows a cliff face. It has also supported the upgrading of 2 airstrips so that small single engine Cessnas can now support the local community.

The extension proposes to continue this support by providing sufficient funds to build a bridge in each centre and several kilometres of track.

3.4 Research, Introduce and Train in Product Lines for Income Generation

Many of the communities have been introduced to new ideas and product lines. Some of these are crops like carrots that they have not been growing before or have not been growing efficiently. Other lines have been small animals such as chickens, rabbits, bees and fish. Processed food has also been introduced to some areas with items such as tahu and tempe made from soya bean that grows locally.

The LEISA strategy will offer more opportunities to introduce new lines of crops whether vegetables, fruit, nuts, or other purpose plants. Cooperation will continue with Dr Fred Rumawas and staff from BPPT to investigate any new possibilities. These ideas will be made in conjunction with the nutrition program to ensure that foods that support a good diet will be grown. What will also be critical to the sustainability of these new lines will be whether a market can either be tapped or created for these items.

3.5 Support the Establishment of Cooperatives

Moves have already been made to establish a cooperative for highlanders in Wamena. It is still in embryonic phase and will need encouragement to continue. The current scheme is operating through the Catholic church in Wamena. The system works thus: the community sells goods to the cooperative for a certain price. The goods are then marked up about 25% for sale to the market. Upon sale to the market, 30% of the mark up is given to the community as an incentive bonus, 30% is kept by the cooperative to be used either as loan/interest payment on any loans or for future savings and the final 40% is kept for overheads.

The Catholic church has set up this scheme with a loan to the cooperative. It is estimated that the scheme is running at a marginal loss to the church because the loan is being given at no interest.

The role for the extension project is to investigate the possibility of assisting with capital grants for the establishment of more cooperatives or enhancing the current cooperative. It would also be possible for the project to enable the integration of its GAD activities into

such a venture. Further work can be done on links with other centres, methods of control, establishment of a board and researching the impact on the market.

Objective 4: Training

4.1 Coordinate Regular In-service Training for Health Personnel

An important activity in the existing project has been the support of in-service training seminars for medical personnel throughout the district. This has been the venue for discussion and decision on protocols and procedures of treatment. It has also been an opportunity for visiting experts or consultants to address a large group of medical personnel from the district. The extension will continue the support for this activity twice a year.

4.2 Conduct and Supervise Inter-village Visitation Program

There appear to be some tribal groups who are more motivated or inclined to change than other groups. These groups have either followed the advice proffered to them or initiated activities themselves. Other groups can learn from them as many of the activities conducted by highlanders are similar. This project activity is to provide for learning by villagers travelling to other villages within the project area to observe the changes brought about and to discuss why and how others have managed change. The proposal is to arrange 2 visits per year of the extension.

4.3 Participate in AIDAB Coordinated Inter-island Visitation Program

AIDAB currently has two other projects that are related to the activities of the extension. Recommendations have been made that staff from the three projects should compare, share and learn from their experiences. These other projects are the:

- Healthy Start for Child Survival, run by PATH in Lombok with a link to Bali.
- Improving reproductive health, run by POGI/PERINASIA also in Lombok.
- Also of interest is the Enhancing Women's Role in Comprehensive Child Development, run by UNICEF through 5 eastern provinces including NTB and NTT.

4.4 Conduct Visitation and Sharing Program

This activity will provide opportunities for community members or DHO/WATCH staff to visit other project in Irian Jaya or in other islands. Alternatively it will provide the resources to attend a training course in advanced skills that may not be available in Irian Jaya.

4.5 Research and Coordinate Higher Studies Program for Specialist Staff

The AIDAB review recommended that certain staff attend overseas courses. The budget limitations do not provide sufficient funding for this level of activity but this activity

provides funds for attendance at specialist training courses in Indonesia or overseas for project or DHO staff. This activity may also provide opportunity for a scholarship grant to a local person to further study or courses, eg in nutrition, that will provide sustainability to the district.

Objective 5: Monitoring and Evaluation Program

5.1 Monitor Use of the Computerised Health Information System

There are several parts to this activity. Firstly, not all the programming for the Health Information System (HIS) has been completed. The AIDAB review recommended that a computer programmer be engaged to complete the programming so as to complete the work faster and release Saptono to manage the work of the component instead of doing it all. This will be even more relevant with additional staff.

Currently programs have been developed for mortality and morbidity rates, analysis of MCH and community development data. However, there is still data to be collected such as a pregnancy master register and drug expenditure register.

Secondly, Saptono will need to monitor the DHO staff to determine if they have understood their training in computer usage and of this system in particular. Thirdly, the WATCH staff and the DHO staff responsible for data collection and analysis will have to make an assessment of how accurately they are compiling information and if the system is performing to the needs of the national health system data base.

5.2 Design and Conduct Regular Surveys of all Project Activities

The role of the Monitoring and Evaluation Coordinator (M&EC) will be to coordinate regular surveys covering nutrition, implementation of first phase training in health services, effective utilisation of equipment supplied in the first phase, monitoring of case management protocols and the development of qualitative indicators for community development behaviour change especially that of gender relations.

It will be important to design a sampling methodology that will be recognised internationally so that the data used to substantiate the proposition that the WATCH approach to PHC is appropriate can be verified.

Most of these surveys will use qualitative techniques so as to discern more accurately what the people feel about their health and the health system. It will thus be an adjunct to the HIS collection system which will be collecting raw figures from health posts.

The regular survey results need to be analysed to discern trends. One interesting pattern that was substantiated on a preliminary basis by the project early in 1993 was that the areas which had better gender relations had better health. The mortality, morbidity and nutritional rates were better than the average rates in other sections of the district.

The project coordinators will need to meet together to discuss the trends in their sectors

and determine if there are trends across the project. The M&EC, together with the PM, will be responsible for producing a trends report every six months.

5.3 Train Six Data Collectors

To conduct these surveys six local staff will be engaged who will be of at least SMA level. They will be trained especially to conduct data collections.

Objective 6: Implement a Management System

6.1 Provide Logistical Support for Activities

As noted in earlier sections, one of the major difficulties in Irian Jaya is communication infrastructure. To get to many of the project sites it is necessary to fly and MAF (Missionary Aviation Fellowship) have a virtual monopoly on internal highlands flights. The weather can also play havoc with plans as there are limitations on the ability of these small planes to land on tiny mountainside airstrips in bad weather.

A further issue is the ability of the coordinators to keep in touch with their cadres. Each puskesmas has a radio but the amount of time available on the selected band is extremely limited. There is the possibility of establishing a small system whereby the purchase of SSB/HT radios using a dedicated band would provide a valuable source of communication.

6.2 Produce Regular Reports

The project will submit a monthly narrative report with financial summary. Each six months a narrative report will be prepared for the Project Coordinating Board (PCB) and an acquittal of expenditure will be submitted to AIDAB Canberra.

6.3 Organise Linkages with Kabupaten Level Government and Between NGOs in Jayawijaya

The existing project called for an advisory committee at kabupaten level but this has never really been implemented. The extension will see this committee revived under the chairmanship of the bupati. Its role will be to review the findings of the project and to determine if there are policy changes or refinements that should be implemented or trialled.

Furthermore it will give the opportunity for other NGOs to contribute to the WATCH findings. This objective will see the project develop more substantial linkages with other NGOs to ensure that a strong network is in place to enable the village groups to have ensuing support.

2.6 PROJECT TIMING

The extension project is scheduled to be completed within 3 years. The earliest start would

be July 1994 which is World Vision's preferred option. This would provide an opportunity for the project to use surplus funds from the existing project and enable the project to use the recommended consultants within the first year so that ensuing activity can be conducted within the framework of their recommendations.

2.7 PROJECT INPUTS

All the major capital inputs will already be in place for the extension. These include the buildings for the Nurses Training School, medical equipment such as cold chain and TBA kits and most office and staff related inputs. Some extra equipment will be needed in Wamena to cater for the extra staff. Computing equipment will be the main items.

The AIDAB review has recommended that a greater emphasis be placed on monitoring and evaluation. More staff have been recommended in both the work with the communities and with the monitoring and evaluation group. In addition, the review recommended the introduction of technical inputs from specialists in epidemiology, computer programming, obstetrics, nutrition, gender analysis and agriculture. These inputs have been taken up in the extension design and budget.

2.8 COSTS AND FINANCING

Costs associated with working in Jayawijaya, particularly in the transport sector, are high as there are few roads. The maps in this document show the roads leading from Wamena to Tiom, some of the way to Kelila, another going east from Kurulu (the new coast road) and one part way to Kurima. These are the only roads accessible by a four wheeled vehicle. Flying is the only way to get around to the major centres and this is expensive.

With regard to the eastern area, there are two ways for Wamena based coordinators to fly there. Firstly, to fly back to Sentani/Jayapura and then fly into Okbibab. Secondly, to charter a flight from Merpati from Wamena solely for the purpose of going east for project purposes. The second option can be more cost effective if a team of staff go in together and have an integrated schedule of activities in the east. It is still difficult however to coordinate all the activities because lack of communication facilities limits the opportunity to plan the schedule adequately.

Communication from Wamena is still relatively difficult. Satellite technology now allows telephone linkages to overseas locations from a limited number of locations and a fax located in the project office allows quick communication to Jayapura and to Jakarta but does not receive fax mail direct from Jakarta. This sometimes results in expensive communication in order to send documents or information.

Finally, the work of monitoring and evaluating is to produce a final output, a new PHC model, that is tested and ready for application elsewhere. The major costs are therefore allocated to staff/specialists, transport and management. There are few major tangible outputs along the way - as noted above these were completed in the existing phase of the project.

The budget has been constructed in accordance with AIDAB Jakarta advice that there would be limits to the funds available viz.: Year 1 \$400,000 and the following years \$500,000.

2.8.1 Budget Summary

OBJECTIVE	YEAR 1	YEAR 2	YEAR 3	TOTAL
Formal health services	69,008	96,260	85,060	250,328
Health activities	4,500	9,200	4,000	17,700
GAD Program	97,873	140,216	126,216	364,305
Training	5,750	51,500	56,750	114,000
Monitoring	50,698	53,912	62,912	167,522
Management	232,030	156,628	157,128	545,786
TOTAL	459,859	507,716	492,066	1,459,641

3. MANAGEMENT

3.1 ORGANIZATION AND MANAGEMENT

3.1.1 Implementing Partners and Their Roles

World Vision Australia is the contractor to the Australian government for the bilateral health project in Irian Jaya. WVA will provide project management support and will have responsibilities in reporting and liaising with AIDAB. WVA's partner in Indonesia is World Vision International Indonesia (WVII).

WVII is responsible for the conduct of the implementation in the field. They have responsibility for staffing, activity coordination, relating to government and NGO organizations in Irian Jaya and daily management of the project. WVII staff will provide support to project staff where necessary and will regularly monitor narrative and financial reports.

WVII is managed through an office in Jakarta. There are several branches throughout the islands which provide administrative support for WVII work and the managers in these offices have responsibility for projects in their areas. WVII has worked in Jayawijaya since 1975 initially in the health sector. Amongst a number of initiatives, this evolved into a large integrated rural community development project which involved the establishment of 38 health posts, training of village workers, clean water, immunisation and health education.

The PM will rely on the Branch Office Manager (BOM) in Jayapura to provide logistical support for the project. All communications from Jakarta still need to go through this office due to the limits of communication facilities in Wamena and equipment and other items can be processed for the project in Jayapura by the BOM's office.

3.1.2 Project Staff

The project staff will consist of the following:

- Project Manager
 - Secretary
 - Janitor
 - Bookkeeper
 - Cashier
- Health Coordinator
 - Local nutritionist
- Gender and Development Coordinator
 - GAD Assistant
- Monitoring and Evaluation Coordinator
 - Monitoring team (6)
- Field staff at each major centre (11)

The primary role of the HC in the extension will be to oversee the inclusion of health related activities in the community development strategy and to ensure adequate standards are maintained in the village health posts. This will include a role in analysing health issues and bringing them to the attention of the medical conferences. Issues such as the standardisation of treatments, development of protocols, needs for retraining, trends in survey results etc would be such issues.

It is critical that some of the existing staff continue with the extension as there has been a huge investment of time and knowledge built up over the project life that is difficult to replace. Of the current staff, it is likely that the Gender and Development Coordinator, Susana Srini, will be available to continue. She has collated her findings on the status of women to the point of developing a module for raising women's awareness and conducting activities for community development focussing on women. She will be able to monitor the progress of WID coordinators in their use of the module and continue to seek out ways in which community development activities can contribute to income generation. Her role will include that of the Community Development Coordinator (CDC) in the existing project.

Saptono Djoko Priyadi has been the Monitoring and Evaluation Coordinator and as such has worked very closely with the PM. In so doing he has caught the vision for the way in which the community development approach can impact the health system. He has been responsible for establishing the computerised HIS, training local health staff in use of computers and more sophisticated collection techniques and analysing the project trends. He is also available to continue in the extension.

A new CDC, Martha Kombong, began in April. She will assume the role of GAD assistant in the extension.

3.1.3 Australian Participation

Mr Andrew Newmarch, a project officer with WVA who has been the Australian director of the WATCH project, will continue to be the project director. Mr Newmarch will be based in Jakarta during 1994 and 1995 and will therefore be able to provide more support and liaison for the project staff and be able to be in much closer contact with the Irianese and central government authorities. Australian presence in the project area will be recognised by regular field visits, in similar fashion to those conducted by Mr Newmarch over the past 3 years.

Dr Peter Riddell, an Indonesian specialist and Manager of WVA's East and Southeast Asia regional group, will provide the administrative liaison with AIDAB in Canberra.

3.2 MONITORING AND EVALUATION ARRANGEMENTS

3.2.1 Monitoring Team

As noted earlier, the AIDAB review recommended a greater emphasis on monitoring and evaluation of the project activities and its progress to the development of a PHC model. The Monitoring and Evaluation Coordinator (M&EC) will have a staff of six collectors who will be responsible for monthly surveys of activities. Particular coordination will be made with the HC and the DHO to ensure that all forms and training initiated by the project can be evaluated.

Notes on the activities of this group are given in more detail in section 2.5 above.

A further monitoring will be carried out by the Project Director and the WVII Associate Director for Operations. This will include six monthly visits to observe, assess and assist the WATCH staff.

3.2.2 Reporting Requirements and Procedures

The project will be required to produce a monthly report to AIDAB in Jakarta as well as a six monthly report to the PCB. In addition, annual plans will be required to be submitted to AIDAB and the GOI for approval.

Monthly and six monthly reports will be compiled in accordance with AIDAB requirements by the PM. These will be forwarded to AIDAB at the post by the Associate Director of WVII in Jakarta. The monthly reports will be forwarded to Depkes at the same time.

Payment of funds will be made by six monthly tranches and these will be acquitted to AIDAB Canberra before issuance of the ensuing tranche of funding.

3.2.3 Project Coordination Board

It is proposed to utilise the existing provision of the Memorandum of Understanding (MOU) for the WATCH project for project management coordination. Paragraphs 5 and 6 of the MOU set out the membership and functions of the PCB which has responsibility for the development and direction of the project and will meet every six months in Wamena.

Members of the Board will include:

- Directorate General of Community Health - Chairman
- Irian Jaya Provincial Department of Health
- GOI Jakarta Representatives from Depsos, Depkes, Sekab (as determined by GOI)
- GOI local representatives from BAPPEDA, Kanwil Kesehatan
- AIDAB - Jakarta post
- Associate Director, WVII

- BOM, WVII
- Project Officer, WVA
- Project Manager
- Nominated consultants
- Other officials as determined by GOI and the Government of Australia (GOA)

The functions of the PCB will include:

- a) Coordinating policy, funding and operations for the project;
- b) Reviewing and reporting on progress to the two governments; and
- c) Recommending to the two governments changes in either the project design or budget.

ANNEX 1.1

LOGFRAME MATRIX

OBJECTIVES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<u>Goal</u> To improve the health and nutritional status of women and children in rural communities in Jayawijaya	Increase in nutritional status of mothers and children	Comparison of baseline survey and end of project records	
<u>Purpose</u> To develop and implement an integrated and appropriate Primary Health Care model for the highlands of Irian Jaya	Acceptance by health and government officials Assessment by consultant	Implementation by health officials	
<u>Outputs</u> 1. Effective delivery of formal health system services 2. Implementation of health promotion and prevention program 3. Implement a gender awareness and community development program 4. Staff and community representatives undergo special further training 5. Implement a monitoring and evaluation program	1. All health centres and posts in project area providing full and regular services and complying with new protocols 1.2 Decrease in mortality rates 2.1 Decrease in level of morbidity rate for communicable diseases 2.2 No of community groups adopting new sanitation practices 3.1 No of community groups able to manage own affairs 3.2 Women's workload decreases and both genders exhibit role change behaviour 3.3 Community income and production increased 4. The PHC model characteristics are written up; adjustments are made to village programs and project strategies 5.1 The processes used to implement this project and changes in health status and behaviour change are recorded and analysed 5.2 Progress confirmed or changes to health system inputs made due to monitoring results 6.1 Meetings conducted	1.1 Site inspections 1.2 Health records 1.3 Monitoring reports 2.1 Survey reports 2.2 Site inspections 3.1 Site inspections 3.2 Qualitative survey results 3.3 Community survey 4. Reports and articles 5.1 Project reports 5.2 Monthly survey reports, qualitative surveys	1. Effective liaison with all medical interest groups in the highlands 2. Innovative measures gain acceptance 3. Communities transfer group strategy to health activities and men share more responsibility 4. Experiences translated into documentation and better practices 5. Links between project strategies and improved formal health statistics can be verified 6. Stable staff
6. Implement a management system	6.2 Travel coordinated efficiently 6.3 Reporting on time 6.4 Expenditure within budget	6.1 Monthly reports 6.2 PCB reports 6.3 Acquittals 6.4 Annual plans	environment 6.2 Communication links cope with demands

OBJECTIVES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p><u>Activities</u></p> <p>1.1 Monitoring of case management protocols for the 3 common diseases in under 5s</p> <p>1.2 Develop an integrated case management protocol for sick children</p> <p>1.3 Develop a malnutrition case management protocol</p> <p>1.4 Continue the development of a suitable food supplement for children</p> <p>1.5 Promote and evaluate sweet potato powder as a super oralyte</p> <p>1.6 Develop and implement a nutrition education program</p> <p>1.7 Monitor the implementation of TBA training</p> <p>1.8 Develop and implement effective case management protocols for high risk pregnancies</p>	<p>1.1.1 % and location of health posts with protocols 1.1.2 % and location of health posts using protocols correctly 1.1.3 No of staff needing and attending retraining</p> <p>1.2.1 Production of charts with integrated protocol 1.2.2 % and location of health posts with protocols 1.2.3 % and location of health posts using protocols correctly</p> <p>1.3.1 Production of charts with malnutrition protocol 1.3.2 % and location of health posts with protocol 1.3.3 % and location using protocol correctly</p> <p>1.4 Production of a suitable food supplement</p> <p>1.5.1 % of households with sweet potato powder 1.5.2 Recovery rate from diarrhoea improved 1.5.3 Mortality rate from diarrhoea decreased</p> <p>1.6.1 Production of materials for non formal education 1.6.2 Malnutrition rate decreased</p> <p>1.7.1 No of TBAs observed /tested 1.7.2 % of TBAs complying with protocol 1.7 No of TBAs needing and attending retraining</p> <p>1.8.1 Production of charts with protocols 1.8.2 % and location of health posts with protocols 1.8.3 % and location of health posts using protocol correctly 1.8.4 Decrease in maternal mortality rate</p>	<p>1.1.1 Inspections 1.1.2 Health records 1.1.3 Survey reports</p> <p>1.2.1 Inspection 1.2.2 Health records 1.2.3 Survey reports</p> <p>1.3.1 Inspection of charts 1.3.2 Health records 1.3.3 Survey reports</p> <p>1.4 Monthly reports</p> <p>1.5.1 Survey results 1.5.2 Qualitative survey 1.5.3 Health records</p> <p>1.6.1 Inspection 1.6.2 Health records</p> <p>1.7.1 Survey results 1.7.2 Monthly reports</p> <p>1.8.1 Inspection 1.8.2 Survey results 1.8.3 Health records</p>	<p>1.1 Protocols accepted by health personnel</p> <p>1.2 Protocols accepted by health personnel</p> <p>1.3 International efforts are also successful</p> <p>1.4 Government can provide appropriate feeding program</p> <p>1.5 Communities learn how to make the powder and keep the powder handy for immediate need</p> <p>1.6.1 Sufficient appropriate food available</p> <p>1.7 TBAs attend all births</p> <p>1.8.1 Women accept diagnosis 1.8.2 Women are able to travel to higher level health care</p>

OBJECTIVES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
2.1 Implement a community health education program	2.1.1 Production of education materials and methods 2.1.2 No of severe communicable diseases decrease 2.1.3 No of late referrals decreased	2.1.1 Inspection of materials 2.1.2 Survey reports	2.1 Ethnographic survey completed
2.2 Implement a malaria eradication and prevention strategy	2.2.1 Adoption or rejection of pyrethrum nets and other prevention strategies 2.2.2 Decreased morbidity and mortality rates	2.2.1 Site inspection and survey reports 2.2.2 Health records	2.2 Availability of plants and materials
2.3 Promote, and assist in supplying, the use of safe water supplies	2.3 Decreased rate of water borne diseases such as diarrhoea and worms	2.3. Survey reports	2.3 Community adopt a maintenance program
2.4 Promote, and assist in supplying, the use of latrines	2.4 Decreased morbidity rates	2.4 Health and survey records	2.4 Community adopt new behaviour
3.1 Organise the establishment of viable and sustainable community groups	3.1.1 No community groups revolving their grants 3.1.2 No of groups integrating sectoral activities	3.1.1 Monthly reports 3.1.2 Study report	3.1.1 Ability of community to adopt and manage new concepts and activities
3.2 Train cadres/coordinators in the gender awareness and application modules	3.2.1 Job roles have changed 3.2.2 Nutritional status of women improved 3.2.3 No of groups adopting LEISA strategy	3.2.1 Monthly reports 3.2.2 Survey report 3.2.3 Inspection	3.2.1 Both men and women accept the analysis and need to change 3.2.2 Animals kept out of growing areas 3.3 Inspection
3.3 Provide infrastructural support with bridges, tracks etc	3.3.1 No and location of bridges, tracks and airstrips supported	3.3.1 Monthly reports and site inspection	3.4 That new products can be marketed
3.4 Research and introduce product lines for income generation	3.4.1 No of new product lines advised and successfully adopted 3.4.2 No of products successfully marketed beyond the immediate location	3.4 Monthly reports and site inspection 3.4.2 Survey reports	3.5 That cooperatives can sustain growth against town business
3.5 Support the establishment of cooperatives	3.5.1 % growth in Wamena cooperative profit 3.5.2 No of groups linked to Wamena cooperative 3.5.3 No of new groups started	3.5.1 Cooperative records 3.5.2 Survey reports	

OBJECTIVES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
4.1 Coordinate regular in-service training for health personnel	4.1.2 meetings per year for health personnel held in Wáména	4.1 Monthly reports	4.1 All personnel can attend
4.2 Conduct and supervise inter village visitation programs	4.2.1 No of participants and no of village groups involved 4.2.2 Change resulting from visits	4.2.1 Monthly reports 4.2.2 Qualitative survey report	4.2 Villagers not overwhelmed by possibilities of change
4.3 Participate in AIDAB coordinated inter-island visitation program	4.3.1 Exchanges with AIDAB funded projects in Lombok and Bali 4.3.2 Change resulting from visits	4.3.1 Monthly reports	4.3 Relevant information can be shared
4.4 Conduct visitation and sharing/training program	4.4.1 No of participants and no of people benefiting from visits 4.4.2 Change resulting from visits	4.4.1 Monthly reports 4.4.2 Qualitative survey report	4.4 New learnings are applied
4.5 Research and coordinate higher studies program for specialist staff	4.5.1 No of specialist courses attended by project staff 4.5.2 Learnings written up and shared with project	4.5.1 Monthly report 4.5.2 Documents and reports	4.5 Appropriate courses can be found
5.1 Monitor use of the computerised health information system	5.1.1 % of health centre reports recorded accurately 5.1.2 % of analyses recorded accurately and returned to health posts	5.1.1 Survey reports 5.1.2 Survey report and health department records	5.1 DHO staff maintain computer skills
5.2 Design and conduct regular surveys of all project activities	5.2.1 Test forms and location strategy available	5.2.1 Monthly reports 5.2.2 Survey reports	5.2 Survey design and methods acceptable to international scientific standards
5.3 Train 6 data collectors	5.3.1 Course held and candidates pass acceptable standard	5.2.3 6 monthly trend report 5.3.1 Monthly report 5.3.2 Test results	5.3.1 Collectors can get to sites 5.3.2 Community are able to give accurate information
6.1 Provide logistical support for activities	6.1 Scheduled activities able to be carried out	6.1 Monthly report	6.1.1 Planes and communication facilities are available
6.2 Produce regular reports	6.2.1 Reports produced for activities and expenditure per month 6.2.2 PCB reports of activities and acquittal statement produced every six months	6.2 Reports	6.2 Staff schedules for report writing
6.3 Organise linkages with kabupaten level government and between NGOs in	6.3 Representatives of relevant government bodies, community groups and project staff meet 3 times a year in Wáména chaired by bupati	6.3 Monthly report	6.3 Government officials see value in

Jayawijaya			the project outcomes
------------	--	--	----------------------

