

SUMMARY OF “BUSINESS AS USUAL” AND “BEST PRACTICE” SCENARIOS

The preceding sections are based upon a series of predictions concerning specific future development in the area that will influence the type and magnitude of NT2 impacts (added impacts). There is, however, a good possibility that many of these developments never materialize. The Savannakhet SEZ, for example, does not attract direct foreign investment, and never truly evolves into a major regional economic hub promoting cross border trade and commerce between Thailand, the Lao PDR, and Vietnam. The projected cement factory in Mahaxay opens as scheduled, but production levels remain considerably below expectations as Thai cement manufacturers decide not to reduce their exports to the Lao PDR and neighboring countries. The Nakai lake becomes a center for eco-tourism, but it does not attract large-scale investment. Hotels, guesthouses, houseboats, restaurants, and bars do not dot the shoreline. It should be noted that there are quite a number of reservoirs in northern Thailand, surrounded by pristine forests and mountains, that have not attracted any large-scale tourist oriented infrastructure projects to their shores. Some of these sites are extremely popular with both international and domestic tourists, but resorts, hotels, and guesthouses are generally located some distance from the reservoirs themselves. Although a similar situation may evolve at the Nakai lake, there should nevertheless be a marked increase in eco-tourism or simply the number of tour-

ists and travelers visiting or passing through the NT2 Project intervention area by both 2010 and 2025.

In many ways it does not matter if all, or any, of the macro and micro-economic scenarios proceed as envisioned. They represent potential developments and trends that have already been put into motion, especially those propelling an ever-expanding segment of the population to migrate elsewhere for employment opportunities. Thus if jobs are not available, to the extent projected by our ‘crystal ball’, in the East-West Corridor, the Savannakhet SEZ many youth, from both urban and rural areas in the Central Region, will nevertheless migrate to other locations such as Vientiane or Thailand. This exodus may have dramatic effects on local and national population growth rates, as young adults postpone marriage or are separated from their spouses, in home communities, for long periods of time. This can reduce fertility levels and the number of children born each year. Thus relieving potential population pressures on limited or marginal agricultural land. On the other hand migration may transfer higher population growth to urban areas, where the expansion of required social services cannot keep pace with the increasing number of people. These demographic imbalances can interfere with national plans for sustainable economic development.

The preceding sections have not focused on some of the sector developments induced by NT2 activities (induced impacts). Hydrology, for example, is one of the key inputs of the NT2 Project, but the health sector assumes that the calculations promulgated by the engineers and water management experts are reasonable. Thus projected water levels in the dry and rainy season proceed as anticipated. Minor problems focusing on reduced water quality caused by sediment and erosion will be mitigated as outlined in various project documents. Damage to vegetable gardens and fish spawning areas similarly will be addressed, and accordingly household food intake and nutrition levels are not adversely affected. Fluctuating water levels, whether in and along riverbanks, or in irrigated fields can promote ideal living and breeding conditions for rodents, certain invertebrates [e.g. snails] and insects capable of transmitting communicable diseases. But these issues should not present undue problems. Increased pesticide and herbicide use, however, is potentially a more serious health issue in the NT2 Project intervention area.

An important note before proceeding is to point out that many interventions carried out under the title “*business as usual*” are often the same as those prescribed under “*best practices*”. Some suitable examples include a measles immunization provided to a previously unvaccinated young child, or the provision of appropriate contraceptive service to a mother who presently does not wish to have another child. At times the only difference between “*business as usual*” and “*best practices*”, is the manner in which the service is provided to the target population.

7.1 The NT2 Health Action Plan

Chapter 16 (Organizational Framework and Responsibilities) of the NT2 Project Social and Development Plan (Volume 2: Resettlement Action Plan) indicates that the Resettlement Management Unit will contain a Social Services Development Unit staffed by three individuals. This will include a Health Officer, Education Officer, and Ethnic Minority Officer. One of the major roles of the Health Officer will be to manage the implementation of the NT2 Project health component. The project has designated funds for regional, project staff, and resettlers health programs. Although these plans may be substantially modified by the newly de-

signed “Health Action Plan”, below is a summary of the objectives of these three health programs.

The “regional health program” has been allocated \$1,094,000 to mitigate against adverse health effects caused by the influx of an increased construction population, as well as to undertake activities to raise the health standards of the local population. The NT2 Project will coordinate its health care activities with provincial and national health programs. Efforts will focus on:

1. Provision of health education to communities concerning endemic diseases, as well as the implementation of appropriate prevention, control and treatment strategies.
2. Provision of sufficient essential drugs.
3. Training and transfer of appropriate technology to health workers and local practitioners.
4. Support for communicable disease programs.

The “project staff health program” is earmarked to receive \$4,500,000 for a work force of 4,200 construction and project personnel. This will cover the provision of health education for all staff to ensure the maintenance of a healthy work force. The program will include an adequately staffed polyclinic at the main construction camp as well as subsidiary treatment posts at the smaller camps.

The “resettler health program” will receive \$511,460 for the benefit of resettlement community inhabitants. It will provide twice-yearly examinations and special services in all resettled and adjacent communities. The program will follow national and provincial health policies and programs.

The NT2 Project has recently funded a team of external health experts, accompanied MOH officials, to draft a comprehensive “Health Action Plan” [HIA] to be included in the Social Development Plan. This exercise was completed in March 2004. Some of its key features are to up-grade the physical infrastructure at selected district hospitals, up-grade laboratory equipment and the current range of diagnostic services; procure additional medical and diagnostic equipment; and provide training opportunities for health personnel. The “Health Action Plan” is very detailed and professionally covers almost ever imaginable health situation that can potentially arise in the resettlement communities on the Nakai Plateau, at the construction and camp sites, and in other communities in the Xebangfai Basin and adjacent districts. Accordingly the HIA should ensure that “*business as usual*” and/or *best practices*” operates at an optimal level. It is not necessarily appropriate for the CIA document to comment on this plan. Instead the CIA will focus on “*best practices*” dealing with key health issues, that have been discussed in preceding sections. These include:

1. HIV/AIDS & STIs.
2. Vehicular and Other Accidents
3. Mental Health, Depression, Suicide
4. Pesticide Usage
5. Insect-Vector Borne Diseases
6. Water Supply, Environmental Sanitation, and Related Communicable Diseases

7. Other Relevant Health Issues:

7.2 “Business as Usual” and “Best Practices” Scenarios

7.2.1 HIV/AIDS & STIs

This report has intimated that although the present prevalence and incidence of HIV/AIDS in the Lao PDR, including the NT2 Project intervention area, is thought to be low, the situation may dramatically change by 2010. The MOH has recently presented its “Round 4 Proposal” to the “*Global Fund to Fight AIDS, Tuberculosis, and Malaria*”. The estimated budget for the AIDS component is approximately \$7,700,000 over a 5-year period [i.e. 2005-2009]. The proposal plans to scale up existing efforts focusing on targeted behavior change communication for certain high-risk groups, an expanded blood safety program, social marketing of condoms, and improving the capacity of testing centers. New initiatives include the development of a referral mechanism for appropriate services as part of voluntary counseling and testing services and expanding these services into government hospitals. They also include new behavior communication change interventions and strategies for mobile/migrant workers at their site of work. The project hopes to encourage *vulnerable groups* to consistently use condoms, and make better use of available STI and voluntary counseling and testing services. Individuals subsequently needing specific services will be referred to facilities and organizations providing appropriate care through new referral mechanisms. The blood safety program is envisioned to protect those needing blood transfusions in 11 provinces in the Lao PDR.

One of the problems with “*business as usual*” is that program designers and service providers, called upon to implement the plan, frequently do not appreciate all of the dynamic and inter-related factors that can contribute to an HIV/AIDS epidemic. Most health workers in the Lao PDR, for example, have never seen an AIDS patient, in the early stages of illness, nor have they witnessed full-blown AIDS or an AIDS related death. Since they have not encountered individuals and families affected by AIDS, they still have not learned that AIDS is not necessarily restricted to selected groups of people participating in high-risk behavior. Nor do they fully understand that so-called *vulnerable groups* include *all sexually active people* as well as those *soon to become sexually active*. This covers an extremely large population. The degree of risk depends upon certain behavioral practices, but in reality *sexually activity* is a basic and natural phenomenon for all species, including human beings.

The NT2 Project, nor local government officials, can not afford to take a wait-and-see approach before deciding to implement appropriate measures to prevent and manage an HIV/AIDS & STIs situation that can easily spiral out of control. The NT2 Project should complement all efforts of the National AIDS Program, as well as spearhead additional interventions by providing adequate levels of funding for prevention, counseling, treatment, and outreach home-care services for its work force and people living in the NT2 Project intervention area. This should include, but not be restricted to the following activities:

Regular Awareness Raising - Information Dissemination Campaigns in all resettlement communities concerning the nature of HIV/AIDS and STIs, as well as explaining what actions can be taken to prevent and treat these illnesses. Separate venues can be established for males, females, as well as adolescents and young adults in order to facilitate inter-active discussions, questions, and op-

portunities to express fears and concerns. Although initial efforts should include health professionals, representatives of mass organizations [e.g. LYU and LWU], and NT2 Project extension workers, a mechanism should be devised to train a network of selected villagers to serve as peer educators for their specific cohort group. These peer educators can act as first-stop “information-counseling points” before recommending further referral for more appropriate services. Similar *awareness-information dissemination campaigns* need to be implemented at construction camp dormitories, camp follower sites, in district centers, at secondary schools, and at places where perceived “higher-risk” groups gather [e.g. truck stops, bars, etc.]. A system of well-trained peer educators is an essential component of this initiative. Adolescents and young unmarried adults rarely feel comfortable discussing sexuality with government health workers who may not approve of their behavior.

De-stigmatizing Campaigns in all resettlement villages, in district towns, schools, construction camps, places where perceived “higher-risk” groups congregate, and other appropriate venues. One of the tragedies of HIV/AIDS in the era when there was no treatment, but which still continues today, concerns the fact that AIDS patients and their family members have been unnecessarily, and at times cruelly, ostracized and abandoned by their communities. This should not be allowed to continue since HIV/AIDS, and STIs, are merely communicable diseases, which do not put the general population, community members, or people in one’s family at risk unless there is a certain level of specific intimacy involved. De-stigmatizing HIV/AIDS so that it is seen as one of many illnesses that can be transmitted to others under certain circumstances, will encourage people to seek information, counseling, and care, in an appropriate and timely manner. This development, by itself, can dramatically reduce the risk of further transmission. In order for such a strategy to succeed, one has to enlist the support of influential people. Although this may include government officials, it also has to include well-respected natural leaders such as monks, village headmen, traditional practitioners, and others who people turn to in times of trouble. De-stigmatizing messages can be inserted as part of regular sermons at Buddhist temples or other religious ceremonies, or at village gatherings. Before a potential HIV/AIDS, and/or STI, epidemic emerges people need to understand that they should not be afraid of this illness. If proper precautions are taken, nobody else need be infected. And if infection develops, there are ways to prevent further transmission, as well as to treat some or all of the signs and symptoms associated with the illness.

Designing Effective HIV/AIDS [& STI] Counseling, Treatment, and Outreach Care Strategies

At the present time there are not any blood testing, counseling, or treatment services for HIV/AIDS at district hospitals. One cannot develop an effective prevention and control program unless it contains these essential components. To do so trainees have to be selected carefully, and sent to sites and/or facilities where they can obtain hands-on competency based skills, as well as theoretical information to expand their understanding of this illness. Since there are very few sites in the Lao PDR that handle large HIV/AIDS patient loads, or implement village-level outreach care services, the NT2 Project should consider other alternative options. In consultation with local authorities and the National Committee for the Control of AIDS, it may wish to explore providing support for short-term study tours, of varying length, to observe dynamic and effective HIV/AIDS counseling, treatment, and outreach care initiatives at appropriate health facilities in Thailand.

The Sanpathong district hospital in Chiang mai/Thailand, is a facility that manages the clinical treatment of hundreds of HIV/AIDS patients. Its out-patient and in-patient wards continually have a flow of AIDS patients suffering from a wide range of opportunistic infections who are clinically managed according to symptoms and/or with HAART [highly active anti- retroviral therapy]. It offers a full range of diagnostic tests, including HIV serological confirmation as well as CD4 and viral-load counts to better manage treatment schedules. The facility has an “user friendly” counseling service for anybody interested in learning about HIV/AIDS or for patients and family members suffering from this illness. It also operates an outreach home-care program in close coordination with sub-district level health centers and NGOs. It is an ideal setting for health professionals, mass organization representatives, and peer educators to learn how to establish and operate a comprehensive HIV/AIDS prevention, counseling, and clinical treatment and management program. The district hospital has also been instrumental in designing community based initiatives that have de-stigmatized HIV/AIDS.

The PATH Foundation Philippines, Inc., a local NGO, has worked with the MOH and the private sector to create the largest STI syndromic treatment and management program in the country. It has trained, and continues to re-train, a network of hundreds of private pharmacies in urban and rural areas that provide information, counseling, and syndromic treatment to STI patients and contacts. Similar study-tours can be arranged to observe how this initiative was established, as well as to learn how it has been able to remain entirely self-sustainable.

Establishing “User Friendly HIV/AIDS & STI Counseling and Treatment Facilities:

In addition to properly training health staff and others, to provide high quality counseling and treatment services, facilities need to be located in appropriate settings. Many people, especially adolescents, unmarried adults, and others [e.g. truck drivers, construction workers, females engaged in the “entertainment sector”], often avoid visiting government hospitals. It is either inconvenient or too public a venue to be seen seeking these types of services. As such other more “user friendly” sites need to be identified and supported to provide HIV/AIDS & STI counseling and treatment services. These facilities can also serve as convenient outlets for condoms, as well as other contraceptives [e.g. oral pills and emergency contraceptive pill-packets] to prevent unwanted pregnancies and reduce the risk of abortions, in rural or urban areas. The LYU and LWU should be invited to play an important role in the design and operation of this project component. The counselors should be drawn from target cohort population(s) as well as include professional clinicians. This can include people from both the public and private sector. The construction camps are an ideal setting for some of these “user friendly” facilities, but other venues need to be incorporated into the scheme. It can include Youth Clubs in schools, during the evening, or for similar clubs established at rural health facilities in the resettlement village area. It should include places where young people congregate to relax and meet on a social basis. The number and type of sites and settings can vary according to locale. Peer educators and professional health workers can receive certain incentive payments for their participation. A key function of these “user friendly” counseling and treatment centers, should be to serve as focal points to help adolescents and young adults acquire basic “life skills” to more successfully deal with new circumstances and situations that can easily emerge in a rapidly changing socio-economic environment. This can include teaching young women not only

about the risk of HIV/AIDS and STIs, but also how to negotiate “safe sexual practices”, such as convincing permanent and casual partners to consistently use condoms. “Life skills” also include instructing young adults how to balance a weekly or monthly budget to ensure that they do not easily go into debt, and come under undue stress and worry that can lead to alcohol and drug abuse, or other self-destructive behavior.

Establishing Outreach Home-Care for People and Families Living With AIDS

Many HIV/AIDS patients, and their families, will not be able to visit government health facilities or “user friendly” counseling and treatment sites, for a variety of reasons. Some of these people may feel embarrassed and not wish others to know of their HIV/AIDS status. Others will simply be too ill to travel outside their home, or unaware of where to go for appropriate care. The NT2 Project should try to establish a “confidential data-base” of HIV/AIDS affected families to help provide social and medical services to its work force as well as to others living in the NT2 Project intervention area. If the disease is de-stigmatized before it turns into a major epidemic, there will be a greater chance that it will be looked upon as simply another communicable illness and affected people and families will not have to conceal their identity. Home health care visits, as part of routine outreach mobile clinics, to resettlement villages, communities in the NBCA, or in and around the district centers, will not attract undue attention. They will make it possible for AIDS patients to receive proper care as well as to monitor medication schedules for serious long-term opportunistic infections [e.g. Tuberculosis] than can possibly be transmitted to other family members.

7.2.2 *Vehicular and Other Accidents*

The frequency and severity of accidents will greatly increase during the “construction and community resettlement phase” of the NT2 Project. This report has predicted that within a relatively short period of time, accidents may become the leading cause of morbidity and mortality in the Lao PDR. This development should not come as any surprise because this phenomenon is being witnessed throughout much of the world, especially in southeast Asia. Although there are many types of accidents, vehicular accidents will become the most serious cause of injury, disability, and death. One relevant question is whether vehicular accidents can be prevented in developing countries? In urban, as well as many rural settings, the large-scale use of motorized vehicles seems to have materialized, as if by magic, almost instantaneously. People who have never sat as passengers are now plying along the thoroughfares, in various acrobatic positions and at velocities usually associated with home-made rockets. There does not seem to be any formal driver’s education requirements necessary to obtain a driver’s license, and traffic rules and regulations are frequently not enforced by local authorities. In such an environment, the following scenario is hoped to be a reasonable approach that can go beyond “*business as usual*” and evolve into “*best practices*” strategies. It can include, but not be limited to, the following components:

Establishing a District Road Safety Awareness Plan

The NT2 Project should work closely with local government authorities, mass organizations, and village and traditional leaders to increase awareness about the dangers of vehicular accidents, to ensure that this issue is given a much higher profile and priority than currently exists. These leaders need to be informed, and appreciate the fact, that vehicular accidents may soon kill, disable, and injure

more people in their communities than all communicable diseases combined. District authorities need to design and implement practical strategies that can impact on the issue. Passing rules and regulations that are not enforced, or allowing anybody regardless of age, or a formal demonstration that they can operate a vehicle responsibly, to be driving on the roads will simply perpetuate the current situation. The plan should, like the one suggested for HIV/AIDS awareness, be taken to the village-level as well as brought into schools, temples, work sites, and other venues where young people congregate. It should avoid unnecessary rhetoric and provide opportunities for drivers to gain an understanding of road safety as well as acquire safe driving habits and skills.

Establishing A Road Safety Enforcement Unit

All individuals, whether police or other government officials, responsible for road safety enforcement should be enrolled in special courses to review existing traffic rules and regulations. They should be given explicit instructions on how to enforce rules and regulations when encountering major categories of infractions (e.g. speeding, driving under the influence of alcohol, driving without a license, driving with an expired license, being under the legal to operate a vehicle, etc.). Village leaders should also be enrolled in a modified road safety enforcement program. This would allow them to warn or fine villagers who are a hazard to the safety of their community while driving; whether it is for speeding, driving while under the influence of alcohol, or allowing children below the legal driving age to operate a motorized vehicle. Fines should not be high or arbitrary. Communities should also verbally indicate beforehand whether or not that they wish to participate in such a road safety scheme before enrolling village leaders into the program.

Constructing Traffic Lights in District Towns and at all Major Intersections

One of the main reasons that vehicles travel at high speeds, through populated as well as unpopulated zones, is that there are very few traffic lights on roads or at major intersections. As such there is no need for drivers to adjust their speed limit, even when passing through populated areas or at major intersections where there may be on-coming traffic. Traffic lights are more effective than traffic signs. Although many district centers are quite small, there should be a national or local [as in the case of the NT2 Project] policy to construct at least three traffic lights at these sites. This can consist of one traffic light at either end of the town, before entering and leaving the district center. Another traffic light can be erected in the middle of town or at any major intersection in the district center. This policy will force all vehicles, but especially long-distance trucks traveling at high speeds, to slow down and/or stop before passing through the district center. Similarly traffic lights should be constructed at all major junctions and intersections, in the rural countryside, to avoid serious head-on collisions. In many parts of the country one can travel for more than one hundred kilometers, at a stretch, without encountering a traffic light. Functional traffic lights unconsciously teach drivers to reduce speed while passing through populated areas that may have pedestrians or bicycles on the road. Prompt law enforcement, and the payment of stiff fines, for infractions, may gradually encourage people to drive more carefully.

Establishing Formal Drivers Education Courses in all Districts

In many countries drivers' education is a required part of the national or provincial educational curriculum. Some programs simply focus on traffic rules and regulations, in preparing interested students to take a formal written examination and a

practical driver's demonstration test. Special "driving schools" instruct students to properly operate a vehicle. Other programs focus on both components; teaching students the basic "rules of the road" as well as how to operate a vehicle to prepare for formal examinations. The NT2 Project should support formal drivers' education courses at the construction sites, for project and government personnel in the district town, as well as for villagers in the resettlement communities and for students attending the secondary school in the district town. Course material should make use of videos, as well as more inter-active methodologies such as "role playing" and "case studies" to illustrate important points as well as make "potential drivers" understand that their behavior on the road can have serious consequences for themselves and others. Once again it would be a good idea to enroll the support of monks and other religious leaders to emphasize the ethical responsibilities of operating a vehicle, since it may lead to the death or disability of an innocent bystander.

Establishing a Financial Incentive Policy to Encourage Safe Driving Habits for NT2 Project Personnel

The NT2 Project should consider establishing a formal policy that offers financial incentives for its drivers, construction workers, and other employees who have a safe driving performance record. This issue may be more relevant to project personnel employed as drivers, but it can include construction workers and other staff as well. The rationale is that NT2 Project employees should receive annual bonuses for safe driving records, as well as fines or dismissals [i.e. in the case of those hired as drivers] for minor and/or serious traffic violations and infractions. Financial incentives, and disincentives, are a very effective means of encouraging project employees to drive carefully and avoid unnecessary risks. Project employees, especially those hired as drivers, need to know that they will be personally held accountable for hazardous driving that endangers the life of others. Safe driving can include the consistent use of safety belts, helmets, having rear-and-side-view mirrors on motorcycles and larger vehicles, etc.

Establishing Village-Level First Aid and Emergency Care for Accident Victims

In addition to vehicular accidents, villagers may also face an increasing array of other types of injuries that could result in disability and death. For those living downstream along the Xebangfai Basin, rising water levels created by the release of water from the reservoir, power station, and regulating and holding ponds can potentially increase the number of drowning accidents. Village level awareness campaigns need to be introduced by the project or by other relevant government agencies and mass organizations. The LWU, and village-schools, are an ideal mechanism to instruct mothers and young children about the need to follow safety precautions while bathing, playing, collecting water, or washing clothes in and alongside the river. Occupational accidents in the fields and injuries around the house should be similarly addressed by a NT2 Project sponsored accident awareness and "first aid and emergency care" training program for health dispensary workers and VHVs. At the present time "first aid and emergency care" is not a basic component of pre-service and in-service training courses for village level health workers and volunteers. The potential increase in drowning related accidents, especially amongst young children and women, living in riparian communities should be a high priority for the NT2 project. Medical staff, at the project polyclinic at the main campsite, can assist district hospital personnel design an appropriate in-service curriculum that enables village health workers and volunteers to obtain specific competency-

based skills. This should include artificial resuscitation for drowning victims, as well as the cleaning, suturing, and dressing of minor wounds sustained at home or at work. The course should also teach health workers and volunteers how to prepare injury victims who need to be referred and transported to a district or provincial hospital, so that the journey does not exacerbate their condition or lead to permanent disabilities. Village level health workers and volunteers should also be trained to provide emergency care for pesticide poisoning accidents as well as for eye trauma caused by pesticide inflammation.

Up-grading District Hospital to Treat Accident Victims

The “Health Action Plan” indicates that the project will train health staff at the Nakai and Nhommalat district hospitals to treat and stabilize major injuries and illnesses [basic orthopedic services, eye trauma services, road and construction accidents]. This sounds fine on paper, but it may not take into consideration the educational and medical background and experience of existing health personnel. As mentioned earlier, in this report, each of these two facilities presently have only one physician. They, and other staff, have never been trained to perform any surgical procedures. Assuming that the NT2 Project could organize this and other technical training programs, what assurances are there that these individuals would remain in remote districts if there were vacancies at the provincial health hospital or health office.

A “*best practice*” strategy may be for the NT2 Project to establish a special post-graduate or in-service training “scholarship fund” to attract clinicians, surgeons, obstetricians, laboratory technicians, vector-borne disease and public health specialists to commit themselves to at least 5 years of public service in Nakai and/or Nhommalat districts. Depending upon the specialty, training could consist of ongoing post-graduate, or special courses, offered at Mahosot, Friendship, and Setthathirat Hospitals in Vientiane. The course of study could also include degree and/or short-term study programs at internationally recognized institutes from countries in the Asia region. Fieldwork could take place in the NT2 Project intervention area. This proposal should attract more health professionals to remote geographic areas, as well as establish a core group of specialists who could subsequently, over a period of time, conduct continual in-service training for co-workers at district and village level health facilities.

More specifically the NT2 Project may wish to adopt a similar approach that was undertaken by the Consortium in the Lao PDR, an international NGO, which has assisted the MOH implement the “War Victims Assistance Project” (WVAP). The WVAP has dramatically improved the capacity of provincial and district hospitals in Xieng Khouang, and Houa Phan, to provide emergency, medical, and surgical care to UXO [Unexploded Ordnance] accident victims. Working closely with surgeons and nurses, at the Friendship and Mahasot Hospitals in Vientiane, a full range of clinical and surgical training courses have been designed and implemented for selected staff at the provincial hospital level, as well as for all professional staff deployed to the district hospital level. The training program is based upon a team-teaching and on-site visit supervisory approach, which cascades down from the national to provincial to district level. The WVAP, in a relatively short period of time, has dramatically improved the capacity of urban and rural health facilities to deal with life-threatening emergencies. Professional staff have been trained to work as a team at Intensive Care Units, Emergency Rooms, and Operating Theaters. They can deal with most trauma issues, and perform selected orthopedic surgical procedures. Although the WVAP is designed to address the needs of UXO victims, the major beneficiaries are in fact the large

number of people injured in vehicular accidents, as well as other patients needing modest-mid level surgery.

7.2.3 *Mental Health, Depression, Suicide*

The NT2 Project will put into motion certain forces that may directly impact upon the mental health of people living in the project intervention area. At a minimum the NT2 Project will relocate selected ethnic minority communities presently living on the proposed reservoir site. Although this resettlement process will, for most communities, consist of a physical move of < 5 kms from their current homes, it may set off a chain-reaction that upsets the normal course of daily life for many families and communities as a whole. The “Ethnic Minority Development Plan” and “Resettlement Action Plan” outline specific measures to take to minimize possible adverse effects of this relocation, as well as ensure that the lives of the affected population are improved. This report, however, has indicated that within the 5-year construction and resettlement phase, other related developments on the Nakai Plateau or in adjacent geographic areas, may cause an entirely new realm of disruptions to communal life, or cause problems within families.

The large influx of construction workers and other migrants, to the district center, will undoubtedly promote changes in daily lifestyle and ways of thinking. Resettlement communities may soon turn away from subsistence farming and be drawn into the market economy. This can include the production of food and other products for sale in the district markets, or by serving as a source of labor for various businesses and venues providing goods and services to construction workers and others in the district. The latter category will probably include adolescents and young adults, who as indicated elsewhere in this report, may decide to travel further away from their homes in search of employment. While this development may promote the inclusion and integration of remote ethnic minority communities into the socio-economic fabric of Lao national society, it can also result in internal conflicts between family members, especially those of different generations. Large-scale migration, both into and out from, Nakai and to a lesser extent other neighboring districts, will erode traditional values and practices, as well as perhaps lead to the disappearance or daily usage of ethnic minority languages within the span of one generation.

The potential effect of an HIV/AIDS epidemic in ethnic minority communities will be devastating for family members who have to care for patients, as well as take care of orphans and/or replace the household’s primary source of income. Constant daily anxieties may develop, in certain households, as migrating family members fail to send home any news of their living/working conditions, or anticipated remittances to support the family unit. For those migrating away from homes, a certain percentage will undoubtedly find themselves in situations where they are physically or mentally abused, or where they feel isolated and disoriented in an alien and perhaps hostile environment. All of the above scenarios will probably lead to an increase in the prevalence and incidence of mental illness. This can include depression, alcohol and substance abuse, violence, and perhaps suicide.

Dealing with the increased amounts of daily stress, associated with modernization, is not a simple task whether one lives in a developed or developing country. It is considerably easier to treat acute illnesses, than chronic conditions for which there may not be a specific cure or ameliorative therapy. A major constraint in the Lao PDR is that the health care delivery system is currently inadequately prepared to deal with mental health issues and problems. Hospitals are not

staffed with psychologists, social workers, counselors, or others trained to handle actual or potential emotional problems. A similar situation exists among other government line agencies and mass organizations. Accordingly some of the proposed “*best practices*” strategies may in fact be impractical to implement.

Establishing Public Awareness Raising Campaigns Concerning Mental Health

Local authorities, members of mass organizations, and community members need to be re-oriented to understand that an entirely new set of circumstances will shortly be underway, as remote districts in Khammouane are gradually brought into national economic development schemes. These groups need to understand and appreciate that mental health problems, just as was the case with vehicular accidents, will become a major cause of illness and perhaps even death in the near future. Members of the LWU and LYU, as well as teachers and community leaders, need to take a major role in being trained and prepared to handle some of these issues. Special courses on mental health preparedness and problem resolution interventions should be conducted on a regular basis.

Establishing Job Placement Agencies to Monitor Domestic and Overseas Migration as well as to Prevent the Trafficking of Women and Children

The NT2 Project should work closely with local authorities, mass organizations, and businesses to establish a local job placement agency. This agency would assist ethnic minority community members, and others, to find suitable employment in Nakai, Nhommalat, and neighboring districts. The agency could ensure that workers are paid as agreed upon in their contract, and that working and living conditions are adequate. The agency would try to keep track of local people who have migrated to other geographic areas of the country [e.g. the East-West Corridor] or to neighboring countries to ensure that women and children are not lured under false pretenses to become part of trafficking networks. This will not be an easy task, but if potential employers see that local government authorities are concerned about their citizens and are willing to keep track of their whereabouts, it may deter unscrupulous agents from entering the NT2 Project intervention area.

Establishing Emergency Mental Health Hotline Clubs

In many urban areas, “emergency mental health hotlines” have been established. These networks employ professional counselors and operate on a 24-hour a day basis to assist “callers” with problems or difficult situations, or to talk with people who may even be contemplating suicide. Although this strategy may be impractical for the Nakai Plateau and other areas of the NT2 Project intervention area, “emergency mental health hotline clubs” for youth, parents, and other at-risk cohort groups can be established in ethnic minority villages, the district center, or at other appropriate venues. A key component of this strategy is to train local people [e.g. teachers, monks, traditional practitioners, members of the LWU/LYU, adolescents/young adults, construction workers, “bar girls”, etc.] to become effective “first-point” counselors for their peers or a larger population. Many people, experiencing an emotional issue, simply require an opportunity to discuss their problem, before feeling better. Others will need professional medical/psychological assistance. If local authorities do not have the proper experience to establish such clubs, or conduct appropriate training, the NT2 Project may wish to invite an experienced NGO, or individual, to help with this assignment on a part-time or full-time basis.

Promoting the Preservation of Tradition Values and Customs

Those who promote the benefits of globalization frequently suggest that these socio-economic changes offer new and unlimited challenges and opportunities for present and future generations. They sometimes ignore the fact that our “global village” may in fact contain less diversity and fewer viable life-styles today than it did 20-50 years ago. The NT2 Project should assist local communities to preserve their traditions through a variety of mechanisms. This can include the promotion of tradition festivals, or the modification of curriculum in local schools which encourages traditional practitioners, religious leaders, farmers, and housewives to enter the classrooms as guest speakers. This approach will help students understand the rich cultural heritage that their parents and ancestors have preserved up until now, and have helped pass down from generation to generation. Some of these “special lectures or demonstrations” can be included as part of the regular coursework on history, biology, health, language arts, etc. Some of these topics can perhaps also be introduced as part of special mini-courses held during annual school vacation periods. In addition to enriching the educational experiences of students, this strategy can help the younger generation appreciate their various diverse cultural backgrounds. It can help students understand that in life one can have separate identities or facets to their personality, and that it is not necessary to be limited a single option.

Pesticide Usage

Although the agricultural extension component of the project will emphasize “Integrated Pest Management” and the avoidance of chemical pesticides and herbicides, unforeseen circumstances may eventually encourage farmers to abandon this approach. Irrigation, during the dry season, will promote the cultivation of a second rice crop and/or additional cash crops; and local, national, or regional market forces may promote the use of pesticides and herbicides to increase yields, exports, and incomes. The use of chemical pesticides and herbicides will endanger the health, and perhaps the lives of many people. Pesticides can be absorbed by the skin, inhaled through the lungs, and consumed through water and food contaminated by these products. Chemical pesticides and herbicides can also enter waterways, from the rice-fields, and gradually endanger the entire ecological system. Not all scientists and physicians agree on the level of pesticide exposure needed before an individual becomes acutely or chronically ill. However chemical pesticide and herbicide usage has been indirectly implicated as a major causative factor in the growing number of cancers, and liver and kidney problems, in rural farming communities throughout southeast Asia. The storage of toxic pesticides and herbicides, in and around homes in rural communities, may also lead to unintentional poisoning accidents or attempted suicides. This has been the experience in neighboring countries.

The NT2 Project should assist local authorities to take pre-emptive measures to ensure that this problem can be avoided, or minimized to the extent possible. Some of the “*best practices*” strategies could include the following:

Promoting Pesticide/Herbicide Awareness Campaigns

Many farmers in the NT2 project intervention, especially on the Nakai Plateau, have limited experience with the use of chemical pesticides and herbicides. It is important that they, as well as local authorities, understand both the short-term and long-term implications of extensive chemical pesticide use, on the environment, and on the health of communities, households, and individuals. Local

merchants, restaurant owners, and others buying agricultural products from farmers similarly need to be appraised of the dangers associated with chemical pesticide usage. Local authorities should encourage all potential consumers and traders to only purchase agricultural products that have not used chemical pesticides. If consumers understand the importance of following such a policy, it will act as an incentive for farmers to follow integrated pest management approaches.

Instructing Farmers and Others How to Properly Use and Store Chemical Pesticides and Related Equipment

Although the goal should be for the establishment of a “chemical pesticide free zone”, this may not be practical under all circumstances. There may be times, and conditions, under which chemical pesticides need to be used. As such the NT2 Project should assist local authorities prepare IEC and other training materials to demonstrate how to properly prepare, use, and store chemical pesticides and herbicides. This can be accomplished through the use of videos, role-playing demonstrations, or other appropriate methodologies. Agricultural extension agents, the LWU, and other government agencies need to participate in this initiative for success. Farmers need to know what type of protective clothing they should wear when preparing and using pesticides. They also need to know how to properly clean utensils and containers used to apply pesticides; and what measures to ensure that these items do not contaminate the environment. Both farmers and mothers need to know how to store pesticides so that they are out of the reach of young children and do not pose any danger to household members. It would also be useful for local schools to include topics concerning the dangers of chemical pesticide usage, and safety measures to take for the prevention of pesticide poisoning accidents as part of biology and health lessons.

Establishing Emergency Treatment Programs for Pesticide Poisoning Accidents

The NT2 Project should support training courses for health personnel at district hospitals and health dispensaries, as well as for village health volunteers, to provide prompt emergency first aid care for accidental or intentional [e.g. attempted suicides] pesticide related accidents. Although ingestion will be the most common medium of pesticide accidents, first aid courses need to cover emergency eye and skin trauma care resulting from exposure to chemical pesticides. In rural areas of Thailand, pesticide-attempted suicide are quite common, especially among adolescents and young adults who cannot deal with minor disappointments in life and who do not realize the seriousness of their actions. This development has already been anecdotally mentioned as a cause of increasing suicides in Nongbok district.

7.2.4 Insect-Vector Borne Diseases

Malaria and dengue fever will continue to be significant health problems requiring specific attention in the NT2 Project intervention area during the construction and resettlement phase. The “Health Action Plan” outlines a number of measures to support national, provincial, and district initiatives to control these two important insect-vector borne diseases. Although the prevalence and incidence of malaria has dramatically declined in Khammouane, as well as throughout the Lao PDR, sustained long-term interventions are required for the foreseen future. As mentioned earlier, the MOH has just presented its “Round 4 Proposal” to the “*Global*

Fund to Fight AIDS, Tuberculosis, and Malaria". The estimated budget for the Malaria component is approximately \$14,500,000 over a 5-year period [i.e. 2005-2009]. The key service delivery areas under the National Malaria Control Programme are vector control with the use of insecticide-treated bed nets, rapid diagnosis and treatment of falciparum malaria cases, and the provision of subsidized bed nets and anti-malarial drugs to poor and vulnerable populations in hard-to-reach areas.

The MOH expects to cover 100% of the 3.6 million people currently living in endemic malaria areas, throughout the country, through the use of either re-treatable nets and/or long-lasting nets [LLN]. Treatment with artemisinin-based combination therapy (ACT) will be instituted to address the increased resistance to chloroquine and sulfadoxine-pyrimethamine. The MOH hopes to reduce the malaria morbidity rate from 6.6 to 1.3/1,000 population, and malaria deaths from 187 to 37 by the year 2009. New drug treatment policies and the use of LLN are expected to reduce the workload and expenses incurred during annual campaigns and re-treatment of bed nets. These measures should hopefully resolve most of the logistical, technical, and operational problems encountered in the first phase of the Global Fund Grant.

Dengue fever [and DHF] may potentially become a more serious health problem in the NT2 Project intervention area. In 2002-2003 several districts in the lower Xebangfai Basin [e.g. Nongbok and Xebangfai districts] experienced explosive outbreaks of dengue fever. There are some major differences between dengue and malaria. Dengue is more prevalent in urban than rural communities, but it can rapidly spread to peri-urban and rural areas as well, often with a high mortality. Unlike malaria there is no specific chemotherapy for dengue, and clinicians must rely on supportive care and proper management of intravenous fluids to prevent the patient from going into shock. *Aedes aegypti* and other related species of the genus are the vectors associated with the transmission of dengue fever. These mosquitoes breed in small collections of water, frequently in and around houses. They tend to be active during the daytime, and hence sleeping under insecticide treated bed nets does not offer any protection. At the community level early diagnosis, rapid referral to the next level, and informing local authorities of an impending outbreak are important actions to be taken. At the district hospital level case management of DHF is the most important intervention, but it may be necessary to rapidly evacuate the patient to a provincial or regional hospital. In many ways dengue is more difficult to control as the mosquito vectors live in close proximity to susceptible human hosts. In the case of malaria, mosquito-breeding sites may be situated many kilometers from the home of susceptible human hosts.

With the influx of more than 4,000 construction workers and perhaps several thousand additional migrants, to the NT2 Project intervention, there will be an increase in optimal breeding conditions for *Aedes aegypti* mosquitoes. Areas where people congregate during the day such as work sites, living quarters, schools, markets, and hospitals should be targeted for control activities. Increased spontaneous settlements, with inadequate water supply (and the need for domestic water containers) and the increased use of rain-filled tires and other containers will lead to increased *Aedes aegypti* populations. Crowded living conditions and increased population movements will exacerbate transmission. These same cohorts may also serve as a focal point for new malaria outbreaks unless they are included in prevention, control, and treatment strategies of the National Malaria Control Programme.

Some “*best practices*” strategies can include the following:

IEC Information and Awareness Raising Campaigns

Local government officials, mass organizations, rural communities, new migrants, and people living in the district center need to understand that malaria has not been eradicated, and that the measures used to control and treat malaria have no effect on the transmission of dengue fever.

Establishing Weekly “Community Mobilization Clean-Up Campaign” Activities

It is important to mobilize the various at-risk populations to understand the importance of emptying any containers [e.g. water jugs, flower pots, discarded tires, etc.] lying in and around the house which can serve as breeding sites for *Aedes aegypti* mosquitoes. These containers must be emptied and scrubbed [both on top and bottom sides] to remove mosquito eggs. Essential water containers, such as domestic water storage jars, and other containers that cannot be easily removed from the environment, should be treated with appropriate insecticides. It is best to organize a team consisting of health professionals, members of mass organizations, housewives, workers, students, etc. who can systematically go around the village, district town, camp sites, work areas, etc. to ensure that all potential breeding sites have been emptied and/or treated with insecticides. This activity has to continue throughout the entire breeding/transmission season. In many communities, the mobilization clean-up campaign takes place on every Saturday.

Conducting Emergency Spraying Operations

In the event of a dengue fever epidemic, it may be necessary to conduct emergency spraying operations. The NT2 Project may wish to support these activities if resources from the provincial health office are inadequate for the purpose. This may include the purchase of a thermal fogger, insecticides, and operating costs for the machine.

Supporting DHF Clinical Management Training Courses

The high case fatality rates associated for dengue hemorrhagic fever illustrate that hospital and health center staff need to recognize potential serious signs and symptoms, as well as be able to make clinical management decisions that can save lives. Many seriously ill patients will need to be immediately referred to the provincial hospital, but since that may not be practical, at all times, front-line clinical staff need to be better trained to take emergency and life-saving measures. The NT2 Project should provide funds for appropriate DHF clinical management training opportunities for district hospital and health dispensary personnel.

Supporting the Procurement and Re-Impregnation of Insecticide Treated Bed Nets for Selected Target Populations in the NT2 Project Intervention Area

It may not be practical for the NT2 Project to provide funding to purchase insecticide treated bed nets for everybody in the NT2 Project intervention area. The project should, however, consider this procurement for all construction workers [if their dormitory sites do not have adequate screening on windows and doors], re-

settlement communities, and for indigent families in the NT2 Project intervention area. There can be several modalities involved, such as subsidizing the entire purchase cost or establishing a fund which recipients eventually repay over a specified time period. The bed nets should be of LLN variety, which can last if properly maintained for 5-6 years. LLNs are impregnated with insecticide during the production process, and accordingly do not have to be re-impregnated for another 5-6 years. For households, which already have IBNs, the NT2 Project should support annual re-impregnation activities. Those nets that are no longer in a usable condition, should be replaced with LLNs, so that eventually all bed nets are of the LLN variety. The NT2 Project may similarly wish to establish a “supplementary IBN fund” for households who need additional IBNs for certain family members sleep in temporary huts adjacent to their rice-fields when they are involved in planting, weeding, and harvesting activities. This will ensure that all members of the household are protected against malaria no matter where they are sleeping. This intervention should be discussed and coordinated with district, provincial, and national Malaria Control Programme personnel

Supporting the Procurement of Artemisinin-based Combined Therapy (ACT) for Falciparum Malaria Patients

With the increased resistance to chloroquine and sulfadoxine-pyrimethamine, the NT2 Project should consider procuring adequate supplies of ACT for the treatment of falciparum malaria cases. This intervention should be discussed and coordinated with district, provincial, and national Malaria Control Programme personnel.

Supporting the Procurement of Rapid Diagnostic Tests for Falciparum Malaria Patients

A key strategy that has led to a dramatic reduction in malaria, has been early diagnosis and adequate treatment (EDAT) of confirmed, or suspected, cases. The project should provide financial support for the training of district hospital staff/laboratory technicians and village-level health/malaria workers, at dispensaries and in at-risk communities, to properly use rapid diagnostic test kits [dipsticks] to confirm falciparum malaria and accordingly immediately commence appropriate treatment. This intervention should be discussed and coordinated with district, provincial, and national Malaria Control Programme personnel.

There are other potential insect and animal-borne diseases, such as scrub and murine typhus, leptospirosis, and filariasis, but they are currently not endemic to the Lao PDR, or not serious public health issues. Construction workers may be at a higher risk of contracting scrub typhus, than the general population, but IEC campaigns at the work site, and prompt treatment of suspected cases are the most cost-effective ways of controlling/managing this issue.

7.2.5 Water Supply, Environmental Sanitation, and Related Communicable Diseases:

The overwhelming majority of people living in the various zones of the NT2 Project intervention area use potable water for drinking and other household purposes that derives from unsafe, or potentially unsafe, sources. Although principal water sources vary amongst zones and between communities, most people use ponds, rivers, streams, unprotected shallow dug wells, and rainwater. The quality of these water sources can considerably fluctuate during the year; with various contaminants and external matter entering water sources during the rainy season. In the dry season there is a danger that the concentration of potentially

harmful pathogens or contaminants increases, so as to make potable water less safe for consumption. The percentage of households with latrines remains very low throughout this geographical area. Most latrines are pit latrines. Very few are of the “hand” flush-toilet or water-seal variety, which are more effective to use as there is less chance for human wastes to contaminate the immediate environment. In addition to the lack of latrines, general environmental sanitation conditions in and around the house are often conducive for the spread of a wide range of water and soil-borne pathogens. Hence it is not surprising that most villagers, regardless of age, have intestinal parasitic infestations [e.g. roundworm, hookworm, pinworm, etc.], and are susceptible to frequent bouts of diarrhea.

Opisthorchiasis, a trematode disease, caused by a liver fluke is exceedingly common in all parts of the NT2 Project intervention area, except for the Nakai Plateau. Although most infections are mild, the pathogen colonizes and obstructs the bile duct, causing jaundice and possibly leading to cirrhosis, enlargement and tenderness of the liver, as well as progressive liver damage. Eating raw or undercooked fish and crayfish is the means of transmission. The adult worm subsequently deposits eggs in the bile duct, which is then evacuated in feces. If the feces enters a water source, the parasite will initially invade an appropriate intermediate snail host and develop into a larva. The larva leave the snail and invade a second intermediate host (certain species of fish and crayfish), where they enter the muscle and encyst. The cycle is complete when another person eats the infected fish raw or undercooked (e.g. in *laab* or *goi*). Opisthorchiasis is probably the most prevalent parasitic infestation in the NT2 Project intervention area. Although there are many campaigns to convince people to change their “eating habits”, the only practical means to alter this situation is to expand latrine use to all households and to provide chemotherapy to infected individuals [i.e. the drug *praziquantel*].

The NT2 project has conducted several intensive studies to determine whether schistosomiasis could potentially be introduced into the NT2 Project intervention area. The opinion of leading entomologists and communicable disease experts is that although the snail vectors are present in the NT2 Project intervention area, it is extremely unlikely that this serious illness can be established outside of its only known foci in the Lao PDR (i.e. Khong District in Champassack). Although the snail vector thrives in many locations in the Mekong River, and on some tributaries it has never established itself in human populations outside of Khong District. Construction and use of latrines, and treatment with *praziquantel*, are the best ways to prevent as well as treat and eradicate the disease.

As previously mentioned in this report, the quality of potable water may potentially decrease during the early period after the COD, as water-volume downstream from the power station, regulating and holding ponds, and downstream channels increase and erode riverbanks. This will increase the amount of sediment in the river, as well as adversely affect natural springs and wells alongside the riverbank. The NT2 Project Social Development Plan outlines a variety of mitigation strategies to deal with such eventualities. The “Health Action Plan” includes an elaborate list of recommendations to improve water supply and environmental sanitation. This includes the implementation of a Khammouane provincial rural water supply and sanitation improvement project. This initiative would provide safe drinking water supplies to many communities at a fixed-rate of piped water, public taps, tube-wells, or protected wells per village. It would also determine an adequate supply of latrines per village. The action plan contains recommendations for the provision of safe drinking water supplies, and latrines, to individual households in the resettlement villages, as well as for camp- sites

and potential camp follower settlements. It is a very comprehensive plan that includes health education campaigns regarding fecal/oral transmission of diseases, and the transmission of helminthic infestations. It includes garbage disposal schemes and other inputs that would improve environmental sanitation and greatly reduce the incidence of diarrheal and other communicable diseases, currently prevalent in the NT2 Project intervention area. As such this, or a modified version of the, plan should serve as both “*business as usual*” and “*best practices*” strategies.

The NT2 Project may also consider doing the following:

Establishing a Latrine Construction Revolving Fund

It may be beyond the scope of the NT2 Project to provide financial support for the construction of safe water supply systems and/or the construction of latrines in every community in the project intervention area. This endeavor would also take many years. A relatively easier, and more cost-effective, approach would be to support the construction of latrines for every household. Many communities and households already understand the importance of using latrines to improve environmental sanitation and to prevent the transmission of diarrheal diseases and intestinal parasitic infestations. Many households simply do not have the financial resources to purchase materials to construct an appropriate latrine. The NT2 Project should consider, in consultation with local health officials, members of mass organizations, and district and village leaders, the establishment of a “latrine construction fund”. Depending upon decisions made at the village level, all families would be eligible for loans [in kind] to construct an appropriate latrine for their household. The time-frame for repayment of the loan, in cash, could vary depending upon the economic status of the borrower. Indigent families could be eligible for subsidized materials, but may have to contribute additional labor, depending upon decisions and agreements made at the village level. Repaid loans could either be returned to the NT2 Project, or remain as an on-going “revolving fund” for future village-level latrine maintenance and construction activities. The NT2 Project should support the construction of “water-seal”, or “hand-flush”, latrines as these are easier to maintain and have a longer life-use than “pit-latrines”. Latrine design, concerning floor, walls, roofing, etc. can vary but “water-seal latrine heads” should be attached to a cement foundation to ensure stability. Even if there is no major improvements made in the quality of potable water at the community level, the introduction and proper use of latrines, by all members of the household, will nevertheless have a dramatic effect on reducing the incidence, and prevalence, of diarrheal diseases and helminthic infestations.

Conducting “Improved Personal Hygiene” Campaigns

Poor personal hygienic practices contribute to the transmission of a wide array of communicable diseases, which are easily preventable. The NT2 Project should support health workers, village volunteers, and mass organizations [especially the LWU] to conduct “improved personal hygiene” campaigns for mothers in the resettlement communities, for other rural villages, and for school children. These campaigns should be of a participatory and demonstrative nature, rather than didactic lectures or speeches. Key issues to cover should at a minimum include, (1) the proper washing of hands with soap and water after defecating/urinating, and before serving food or eating meals; (2) regular trimming and cleaning of finger-nails; and (3) regular bathing [preferably at least once a day]. Active participation, in addition to being potentially enjoyable exercises, will allow all partici-

pants to demonstrate that they have learned new skills that will improve their health as well as perhaps that of other family members. It should be emphasized that a simple exercise like properly washing hands, after defecating/urinating, and before serving food or eating meals will dramatically reduce the incidence of diarrheal diseases and acute respiratory infections. This is especially relevant for young children, and the essential reason why mothers need to be taught these basic but potentially life-saving skills.

Conducting Food Safety and Food Preparation Inspection Campaigns

With the influx of a large number of construction workers and other migrants into certain sections of the NT2 Project intervention area, there will be an increase in the number of restaurants, food stalls, and markets preparing and handling food. These sites can potentially serve as focal points for the outbreak of water-borne diseases, as well as transmission points for foods containing intestinal parasites and/or pesticides. The NT2 Project should support local health authorities, mass organizations [e.g. the LWU], and other relevant agencies to monitor, on a regular basis, the quality of food sold in markets and at restaurants, food stalls, and other venues. Once again the campaigns should include participatory demonstrations to ensure that the target population acquires specific skills to reduce opportunities for communicable disease transmission. In addition to covering topics concerning “improved personal hygiene”, the inspection campaigns should cover the cleaning and handling of utensils used in the preparation and serving of food [e.g. pots, pans, plates, trays, glasses, spoons/forks/knives, cutting boards, water storage containers, containers used to wash utensils, etc.]. The course should cover the proper way to wash vegetables and meats before being cooked or served to ensure that potential pathogens and perhaps pesticides are not consumed. Those restaurants, food stalls, and other venues serving food demonstrating high hygienic standards should be presented with a formal certificate, which can be displayed in their establishment, attesting to their high food safety standards. Certificates should be presented annually to ensure that food safety and preparation standards are maintained. Those establishments that refuse to improve their food safety or preparation standards to a required level can be warned, fined, or closed down by the proper authorities. A similar campaign can be conducted in food markets and food stalls in district towns. Local authorities should support these efforts by providing all food establishments and market stalls with adequate supplies of garbage disposal baskets that are collected or emptied on a regular basis. Collection fees can be mutually decided upon between users and relevant government agencies.

7.2.6 *Other Relevant Health Issues*

Even if the above mentioned suggested “*best practice*” strategies are implemented successfully, many people in the project intervention area may still face a poor health prognosis. This is especially true for women of reproductive health and young children, living in remote areas, as the current health care delivery system is not able to properly address many of their immediate health needs. This report, and others, has illustrated the unequal distribution of health facilities and trained manpower between urban and rural areas, especially for remote ethnic minority communities. Without properly addressing this issue, health status will remain poor in these geographic areas. There may be less illness and death attributed to malaria, but women of reproductive age and young children may still become ill and die from preventable illnesses or conditions. Accessibility to contraceptives needs to be placed on a similar footing as that which was established for the distribution of insecticide treated bed nets. Increasing the availability of

contraceptives is the simplest means of reducing population growth and undue pressure on land and other local natural resources and social services. It is also the most cost-effective way to dramatically reduce maternal and infant mortality rates in a relatively short period of time. The technology is simple and user-friendly. It simply needs a more appropriate means of distribution to reach those in need, or wishing to receive, such services.

Two major constraints in improving health care for rural and remote areas concern accessibility and cultural acceptability. One of the reasons for this predicament is that the existing health service delivery system operates on a philosophy that promotes “facility-based health care”. What this means is that all potential clients and/or sick patients are required to physically travel to the district hospital or village health dispensary for services. While this may seem a logical approach from a medical perspective, it does not take into consideration that most people “in need” of basic health services are not ill. As such rural women will not necessarily take the time to travel far distances, by themselves or with their children, for ante-natal and post-partum examinations, contraceptives, and/or nutritional surveillance services when they have many other essential daily tasks to complete in and around their homes and fields. If the National Malaria Control Programme, followed a simply approach, rather than by making the distribution and re-impregnation of IBNs and the provision of EDAT available at the village-level, for all at-risk villages, it is doubtful whether that the incidence and prevalence would have declined to its present level. Contraceptives will probably save the lives of more women of reproductive age and infants than IBNs and EDAT interventions, yet this health service has a much lower priority. Equally disturbing is the fact that very few health professionals even understand the association between contraceptives, birth-spacing, improved health for mothers and young children, and reduced maternal and infant mortality rates.

Some of the ways to improve this situation may be to adopt the following “best practice” strategies:

Establishing Special Scholarship Funds for the Deployment of Multi-Purpose Health Workers at Village Dispensaries

Although there are too few health dispensaries in rural and remote geographic areas, an equally serious problem is that those deployed to these village-level facilities do not have the pre-requisite skills to provide high quality care. This situation will not dramatically change, in the near future, even with greater regularity of additional in-service training opportunities for health personnel deployed to these sites. The NT2 Project may wish to establish, in consultation with district, provincial, and national health authorities a special “scholarship fund” to train multi-purpose health specialists to work at remote village level health dispensaries. Training can cover many topics, but it must up-grade midwifery/obstetrics skills, general clinical care, communicable disease prevention, and counseling services. The trainees can include existing health personnel from provincial or district hospitals, or even from the health dispensary level. Courses can be conducted at both the provincial and national level, as well as consist of overseas training opportunities designed to up-grade specific competency-based skills/aptitudes [e.g. pre-and post test HIV counseling, the clinical management AIDS, etc.]. Trainees must agree, beforehand, to be deployed to selected rural/remote health facilities for a period of 3-5 years. As such “scholarship fund” may need to include a reasonable “hardship allowance” to serve as an incentive for highly skilled health workers to remain at their post for the required time period.

Supporting Efforts to “Move Beyond Facility-Based Health Care”

Health authorities, at all levels, must be re-oriented to appreciate that improving accessibility to basic health care needs to include regular outreach, and/or mobile clinic, visits to rural and remote communities. There are too few patients, whether in-patients or out-patients, to justify having a large number of health personnel permanently based at static facilities. Better coordination needs to exist between vertical health programs [e.g. Malaria Control, Safe Motherhood, Birth-spacing, EPI, etc.]. This will reduce operational costs and ensure that the same target groups have access to a wide range of comprehensive promotive, preventive, curative care services that *save lives*, and which can be provided in or near their homes. Regularly scheduled mobile/outreach care clinics, if implemented properly, can also serve as on-site supervisory and continuing in-service training sessions for village level health workers, volunteers, and traditional birth attendants. These visits will also promote greater local participation and involvement in the provision of basic health services at the community-level. The NT2 Project should promote the establishment of a team approach, which utilizes health professionals and members of mass organizations. The NT2 Project should support daily allowance and operational costs. These budgets should complement and expand upon existing local health action plans and available resources.

Supporting On-Going In-Service Training Education For All Level of Health Care to be able to Address New Emerging Health Issues and Problems:

This report has indicated that within a relatively short period of time the NT2 Project intervention area may be facing considerably different health problems and issues. Although this may initially include a marked increase in the number of people, and families, suffering the effects of a dramatic rise in the prevalence and incidence of HIV/AIDS, STIs, vehicular accidents, and mental health problems, it will eventually comprise a much broader range of health related issues. The Lao PDR will probably follow the same pattern witnessed by most of its neighbors in the region, such as Singapore, Taiwan, Malaysia, Thailand, and to a lesser extent China, Viet Nam, the Philippines, and Indonesia. Chronic and debilitating illnesses, associated with aging, life-style changes, and advances in medical technology, will promote the emergence of non-communicable diseases as the major cause of morbidity and mortality. These ailments are more difficult to treat or cure than the acute, and at times explosive, episodes associated with communicable diseases. For many patients treatment will never result in a cure. Similarly many of these individuals will need long-term follow-up care for many months, years, and/or for the remainder of their lives. The modalities employed to provide treatment to patients suffering from diabetes, hypertension, and cancer, for example, can be entirely different than that for dengue shock syndrome, profuse diarrhea, and other acute illnesses, both in terms of timeframe and the required types of medical and diagnostic equipment.

Health personnel, at all levels and at every health facility, need to be prepared to handle situations that may be substantially different from the ones they currently encounter. Health personnel will not acquire new health knowledge and skills by osmosis. They will need to be exposed to theoretical and practical training opportunities that provide them with a better understanding of the relevant issues involved, as well as a chance to develop and refine specific competency-based skills. The NT2 Project needs to anticipate, in advance, the realm of reasonable possibilities that may arise, and take the necessary measures to ensure that health personnel are ready to deal with these problems before they reach a criti-

cal point. As mentioned above the health picture in the NT2 Project intervention area will have already undergone certain major changes by 2010. By 2025 health workers will need a vast new array of skills, and medical equipment and supplies, to address a health scene dominated by non-communicable illnesses and conditions. As such the NT2 Project should consider developing a long-term health manpower plan that includes the provision of frequent on-going in-service training courses for the next 20-year period. This human resource development plan should cover all categories of health workers and village volunteers. It is also imperative that this plan include a special “scholarship fund” for post graduate studies in the fields of internal medicine, cardiology, urology, obstetrics-gynecology, radiology, surgery, and laboratory technology. Since many of these specialized services will not be available at the district level by 2010, and even perhaps by 2025, training opportunities need to be opened for provincial level health personnel. The NT2 Project may wish to explore whether a special “scholarship fund” can be developed to increase the quota for various categories of health personnel and specialists who could be trained [from the pre-service level on upwards through post-graduate studies] for future deployment to the NT2 Project intervention areas. Many types of post-graduate medical-health specialty training programs are currently available in Vientiane. Some trainees should, however, be eligible for long and short-term training opportunities at international renowned institutions in the region.