

Needs of the People Affected by the Eruption of Mt. Pinatubo and the Suggested Cooperation



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and
the Suggested Cooperation Programs**

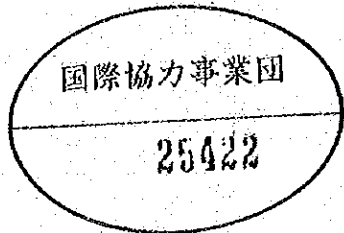
A Report Submitted by the JICA Contact Mission



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Japan International Cooperation Agency

INTERNATIONAL ASSOCIATION OF
AGRICULTURAL LIBRARIANS AND DOCUMENTALISTS
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Summary

The JICA Contact Mission was dispatched to investigate the current state and needs of the people affected by the eruption and the consecutive mud-flows of Mt. Pinatubo in the Republic of the Philippines in July 1991. The Mission studied the country's rehabilitation program and the possibility of JICA's cooperation projects.

A team consisting of seven members carried out its mission from December 12, 1991, until January 11, 1992. The Mission visited disaster-stricken areas, interviewed the victims at resettlement sites and refugee camps and had discussions with the Central Government, local governments, assistance donor offices and non-government organizations (NGOs). By doing so, the Mission was able to gather realistic information that was not previously available in Japan.

This report explains facts found by the Mission about the current state and needs of the victims and other residents. The Mission's view and proposals on the necessity of JICA's cooperation projects are also presented. Nevertheless, the responsibility for the content of this report is limited to this Contact Mission. It represents neither JICA's nor the Japanese Government's view.

The areas surrounding Mt. Pinatubo are covered deep with volcanic ejecta, while land and houses in some areas have been washed away by mud-flows of the volcanic ash during the subsequent rainy season. At present, these areas have no prospect of restoration at all. It is estimated that about 60,000 families (about 300,000 people), mostly the residents of these abandoned areas, have been forced to resettle in other places. The Philippine government has been constructing permanent highland and lowland resettlement sites in the region and other settlement sites outside the disaster-stricken areas.

Under the Government's resettlement plan, nine highland resettlement sites have been completed and approximately 10,000 families, made up mainly of the Aeta, a minority tribe who lived at the base of Mt. Pinatubo prior to the eruption, have been accommodated. These highland resettlement sites commonly lack water sources, prospects for making a livelihood and social services such as health care and education. A self-help project has been formed by the residents with the help of government social workers, but due to a lack of resources and funds, many sites are unable to sufficiently accommodate the Aeta's needs and life style. These

sites may then end up as a temporary refuge and not fulfill its original purpose of creating a permanent community for the Aetas.

The Government plans to construct thirteen lowland resettlement sites which will accommodate about 40,000 families. However, only 4 or 5 sites will be completed before the end of 1992, and these sites can accommodate no more than 15,000 families. The lowland sites are being constructed under nearly the same program as ordinary housing land development projects for urban low-income people. But most of the refugees may not be able to afford the purchase of the houses in these resettlement sites and the only way for them to make a living is to be employed in cities or to be self-employed. It will be hard to make a living especially among farmer refugees. Many of the lowland settlements are located in areas where a possibility of mud-flows during the rainy season cannot be denied.

The number of refugee centers had decreased to 120 by the time of the survey from the peak of 865. However, about 26,000 families (about 120,000 people) still remain at the centers. Farmers and unskilled laborers account for 36% and 26% respectively among the present refugees. Aeta people were not seen at the centers since they had already been accommodated at resettlement sites.

The living environment of most centers has been improved since the number of refugees at each center has decreased. Nevertheless, these refugee centers still have problems such as insufficient health and medical care, lack of provision for the transfer to resettlement sites, decrease in government assistance and the refugees' inability to find jobs. In addition, there exists a growing frustration among the refugees as sufficient information is not available to them.

Under the agrarian reform program, five other settlement sites outside the seriously disaster-stricken Zambales, Pampanga and Tarlac provinces are planned for farmer refugees. The migration operation has started, but increased poverty among the migrants may occur if the following are not improved: 1) the poor state of agricultural infrastructure and access roads, 2) insufficient assistance in farming technology, 3) financing and inadequate social services such as health care and education.

Since a great number of houses, stores, factories and farm land were partially destroyed or buried in mud, most residents who have returned to their previous homes are faced with the problem of making a living. The Government and NGOs are facing difficulties to provide sufficient assistance to all of them. In many areas, farmlands were buried by volcanic ash or washed away by mud-flows and irrigation facilities have been destroyed. Since this disables or limits farming, a considerable

number of farmers are impoverished, making a more comprehensive program for the relief and the restoration of agriculture an immediate necessity.

On June 26, 1991, the Government of the Philippines established the "Presidential Task Force on the Rehabilitation of Mt. Pinatubo Eruption-Affected Areas" with five committees namely: Livelihood, Social Services, Infrastructure, Resettlement and Science & Engineering organized under it. The Task Force formulated guidelines for and allocated budgets to relief and rehabilitation activities by its members, namely the related ministries and agencies of the Central Government. The management of relief and rehabilitation projects are left as the complete responsibility of the respective executing organizations.

On-going government assistance has been extended to partial rehabilitation mainly because of a financial problem. The Task Force had already spent 85% of its budget at the time of the Mission. Future relief and restoration projects will be limited to those which have already been started by various ministries and agencies and the services will be continued by the regional offices. As the national election in May, 1992 draws near, the focus has shifted and the Mt. Pinatubo eruption victims are getting less attention.

The prospects remain bleak for: 1) approximately 40,000 families who are still at the refugee centers, 2) approximately 10,000 families who have migrated to resettlement sites; and 3) an enormous number of disaster-affected residents who are still having great difficulties in making a living.

The Government of the Philippines has sought financial and other forms of assistance from donor countries and international organizations. Most donors have been actively engaged in emergency relief operations, but all of them remain cautious about restoration programs, since secondary disasters due to mud-flows during the rainy season in the next several years are feared. NGOs have actively cooperated with government organizations and have played an important role in relief operations. These organizations plan to promote agricultural rehabilitation and livelihood projects, but are also faced with the problem of shortage of funds.

In view of the above situation, the Mission found the necessity of JICA's cooperation in the following six fields and proposed several projects whose details are outlined in this report. Discussions between the Philippine and Japanese Governments are expected to be conducted to materialize these projects.

1. Improving the living conditions in the highland resettlement sites.
2. Improving emergency preparedness for secondary disasters.
3. Restoring agricultural production in disaster-stricken farmland.
4. Comprehensive rural development of farmer's settlement sites.
5. Detailed damage analysis and scientific forecast of secondary disasters.
6. Formulating a long-term comprehensive regional development plan.

The Government of the Philippines has made great efforts for relief and reconstruction, however, understandably many problems still persist. These include a lack of funding and a lack of experience to handle a natural disaster of this magnitude. In consideration of the humanitarian viewpoint, and the economic development of the Philippines, it will be Japan's mission to offer all possible cooperation. Japan should work towards constructing an environment that will facilitate the activities of other donor countries and international organizations.

The Mission would like to extend its sincere gratitude to all the Filipino people who assisted and cooperated with the Mission, enabling it to pursue its objectives.

JICA Contact Mission
on
Cooperation Program for Mt.Pinatubo-Eruption Affected People

1.Objectives:

To study;

- (1) the situation of victims of Mt.Pinatubo-eruption and following disaster,
- (2) the rehabilitation programme by the Philippines Government, and
- (3) the possibility of JICA's cooperation program.

2.Member List:

<u>Field In-charge</u>	<u>Name</u>	<u>Office of Origin</u>
Leader cum. Resettlement	Mr. Shiro Akamatsu	Rural Development Specialist, Institute for International Cooperation, JICA
Cooperation Policy	Mr. Jiro Komatsu	Official, Development Cooperation Division, Economic Cooperation Bureau, Ministry of Foreign Affairs
Environment	Mr. Kazuo Sudo	Deputy Director, Environment, WID & Global Issues Division, Planning Dept., JICA
Livelihood Development	Mr. Akira Namae	Former Deputy Secretary General, SHAPLA NEER-Citizen's Committee for Overseas Support (Japanese NGO)
Community Development	Ms. Keiko Itagaki	Associate Specialist in Community Development , Expert Assignment Dept., JICA
Rural Infrastructure	Mr. Takao Kume	Deputy Director, Overseas Planning Department, Sanyu Consultants Co. Ltd.
Cooperation Program	Mr. Takahisa Kusano	Officer, First Planning Division, JICA

3.Schedule:

12 December, 1991 ~ 11 January, 1992

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Chapter 1: Current State and Needs of Victims

1-1 Outline of Current State and Needs of Victims

The total number of the victims is 1,180,132, which accounts for about 20% of the total population of Region III. The number of completely destroyed houses and that of partially destroyed houses are 41,796 and 70,257, respectively. Of the farmers and urban type workers, 623,929 persons were affected. Of the working population, 115,800 people evacuated their homes either for a short term or a long term. It is estimated that about 50% of them (57,900 people) have become completely unemployed. In addition, 89,483 families, including the residents of 21 communities which were abandoned completely due to the damage attributable to a heavy ash fall or by the damage attributable to a mud flow, were accommodated at refugee centers at least temporarily. According to the DSWD's report 35,115 persons or 7,841 families of the Aeta tribe were affected.

The eruption of Mt. Pinatubo brought about serious damage in a large area and in various fields. The current state and the needs of the victims depend on various conditions, such as age, district, professional background and race, as well as on the seriousness of the damage and the measures taken for them. At present, victims can be classified broadly into the following categories. Their current state and needs shall be reported on the basis of this classification.

- a) immigrants to resettlement sites
- b) victims staying at refugee centers
- c) immigrants to other districts

1-2 Current State and Needs of the Resettlement Program

(1) Potential Needs of the Resettlement Program

Naturally, the high priority beneficiaries of this program are those who already live in resettlement sites and those who still live at refugee centers and have neither a house nor a living space to return to. The beneficiaries include some of those who are living temporarily with relatives as well. According to the survey on resettlement conducted at the refugee centers, more than 80% of the people wish to be resettled as of December, 1991. However, there are some families who are afraid of secondary disasters or have not recovered from their fears of the present disaster. Almost all of the affected families of the Aeta tribe had to be put under the settlement program because of their special circumstances.

In consideration of the above factors, the potential quantitative need for the resettlement program is estimated to be about 60,000 families. (This includes approximately 10,000 families of highland and mountain residents, such as the Aeta tribe.) However, it is not easy to estimate the potential needs for the resettlement program and to set the conditions which the program must satisfy in the Philippines where nearly half of the total population is classified in the poor class. (In Region III, poor families account for 39.6% of the whole in 1988.)

It goes without saying that "settlement" means to provide employment, education, residence, fresh water, medical care, etc. In other words, it is important to satisfy the so-called BHNs. In addition, the existence of cultural elements, such as opportunities for providing basic amenities, will also be essential. However, the highest priority should be given to the prospect of at least the minimum livelihood among the BHNs, in view of the fact that the state of many poor income groups in cities is attributable to the poverty of rural areas in the Philippines. According to the results of a limited survey on the life of poor people in rural areas (REGIONAL POVERTY PROFILE OF SAMAR & LEYTE ISLANDS, 1990 etc.), people show a strong interest in obtaining the prospect of making a livelihood in a new settlement area, having the chance of educating their children and having access to health care and medical services. This provides useful information and it need scarcely be said that various measures should be planned in consideration of many background factors, such as the refugees' professional configuration.

Special factors should be considered for the 7,841 affected families of the Aeta tribe. Mt. Pinatubo used to be the object of their faith. They used to live on hunting in highlands and

mountains and shifting cultivation, thus they must resettle in mountains and adequate site conditions and a living space must be guaranteed. They have been historically discriminated by lowland people, therefore they should not live with mountain farmers of lowland tribes. These conditions must be satisfied for the Aeta tribe.

These are some of the minimum requirements of the resettlement program and there are many other conditions that must be satisfied. For example, it is important to give assistance to re-settlers' psychological tension, their efforts to create a self-governing function, their access and negotiation with the external society and their social activities as a new administrative unit. The Aeta tribe's residential space has been gradually encroached by the pressure from the outside world. Recently, their way of life has been changing. For example, there are cases of contacts and marriages with lowland people. It is highly desirable to give an adequate consideration to the small tribe which is in a social transition period. For example, this must be considered in selecting a resettlement site, constructing education and health facilities and making personnel assignments. The DSWD (Department of Social Welfare and Development) classifies a person born by an inter-tribe marriage as Aeta up to the third degree.

The pending problem of the lowland resettlement program is whether resettlement sites for accommodating about 40,900 families can be constructed as planned. The pending problem of the highland resettlement is whether the above conditions can be met although there is a prospect of satisfying the quantitative requirement. There is a large difference between the lowland settlement site development program and the highland resettlement site development program in the average area per family and the supplementary facilities. The largest difference is that the ordinary housing land development policy for urban low income people is applied to the former. In other words, the program simply sells housing lots. On the other hand, the latter is planned in consideration of the living environment of the Aeta tribe and other mountain farmers to a certain extent. The materials and tools for constructing houses are provided gratuitously in highland settlement sites, while they must be paid for in lowland settlement sites. Therefore, it is an important question whether the lowland settlement site development is appropriate as a relief plan for victims. This issue should be studied thoroughly. In addition, the problem of living environment in the cultural aspect still remains unsolved. For example, lowland people and highland people (Aeta tribe) live together in many highland resettlement sites because the construction of lowland resettlement sites was delayed.

The pending problems will be discussed separately hereinafter.

(2) System of selling residential land in lowland settlement sites

As stated before, the NHA (National Housing Agency)'s method for housing land development projects for urban low income people is adopted for the Task Force's (TF) lowland settlement program. Therefore, the first problem is whether potential re-settlers have the ability to purchase housing land. Since loans from financial organizations are generally used for such housing land development, housing land must be obtained for counter value. It seems that the following standards will be applied mechanically to this program as well.

If the housing land area is 300m, the monthly installment payment is P500 and the repayment period is 25 years. Several sizes between 90m and 300m will be offered. This issue is discussed within the TF as well. Various studies, including housing land purchase loans and housing land construction loans, are being studied. The final content of the housing land sales plan has not been determined as of January, 1992.

(3) Securing means of livelihood in lowland resettlement sites

A survey of the refugees' occupation covered 59,356 persons. When 17,267 persons who did not answer are subtracted, effective answers were obtained from 42,092 persons. It was found that slightly more than 30% of those who gave an effective answer (42,092 persons) are engaged in rural occupations in the agriculture and fisheries sectors. Slightly less than 70% of those providing effective answers are engaged in urban occupation. This indicates that many of the immigrants to lowland resettlement sites will be refugees having urban professional backgrounds. Opportunities of making a livelihood that is suitable for these backgrounds must exist. However, it will be difficult to create such livelihood opportunities because of the problem of secondary disasters and because of the insufficient mandate of the ministries and agencies in charge, including the DTI, the TLRC and the DA. As stated before, re-settlers must obtain the means of living by working in the adjacent farmland and by finding urban-type

employment opportunities which must be created newly. However, this will be extremely difficult in the social and economic environment of the Philippines where the rate of unemployment is high even in the ordinary situation.

Therefore, it can be said that the current lowland resettlement program is appropriate for the needs to some extent, if it is for the more wealthy sufferers. If the refugees who are accommodated at the refugee centers are assumed to be the main target, many people will leave the resettlement sites after 1 to several years after their resettlement. As a result, it is highly possible that the damage from the disaster must be absorbed by the risks and efforts of the victims themselves. Old people, infants and children will be sacrificed due to these risks. Unless some adequate measures are taken, their disease and death rate can increase even though temporarily.

(4) Securing means of livelihood in highland resettlement sites

On the other hand, the average settlement land area per family is only 0.47 ha in highland settlement sites. It is far smaller than the three ha per family, which is regarded as necessary for mountain agriculture. Handicraft activities (DTI), afforestation (CONTRACTFORESTRY, DENR) and fruit culture (DA) are planned in order to make up for this shortage. However, it would be difficult to meet the immigrants' needs even by these programs. Some families have already left highland resettlement sites (such as the IRAM and DUEG settlement centers) to obtain a larger living area.

It is said that the free food ration which has been continued will be stopped on December 30, 1991, in principle. It has been discontinued in reality at some settlement places. At present, bamboo cultivation, the DSWD's relief works for the unemployed (CASH FOR WORK) and employment loan program (SELF EMPLOYMENT ASSISTANCE PROG.) are in progress in addition to the livelihood programs which were explained before. Victims are obtaining some income from their relief projects.

According to the DSWD, the discontinuation of the food ration is a positive measure for suppressing the victims' dependence on assistance and encourage them to settle and be self-supporting. However, it is obvious that the victims have no prospect for preparing for and securing the means of livelihood. When interviewed, the site managers who are dispatched by the TF uniformly complained of the shortage of means of livelihood and the lack of prospect. The government employees who are in charge of providing and spreading the means of livelihood in settlement places are the DSWD's and the DA's employees in the most cases. This is because these offices have many advisers, and social workers throughout the country. A lot cannot be expected from other government organizations.

(5) Problem of improving the cultural living environment in highland resettlement sites

This problem is attributable to both the historical and current situation of the Aeta people tribe. In short the Aeta people, who are the aborigines, have been invaded and discriminated against by the lowland people (new settlers) both in the past and at present. In other words, the victims of the Aeta people continue to have bitter experiences with the lowland people and therefore the Aeta have a deep distrust of the lowland people. On the other hand, one of the factors that complicated the current problem is that the Aeta people do not have a spiritual and social heritage adaptable to the changes in the social environment. At present, only private groups with religious backgrounds have a relatively positive contact with the Aeta people. The fact that many of the Aeta people who have already immigrated to settlement sites belong to Christian sects (Catholics and Protestants) clearly indicates that these private groups are the main contacts between the Aeta people and the real social environment. Recently, there have been increasing contacts between the Aeta people and mountain farmers and marriages between them are increasing as well.

On the other hand, they still hold their religious tradition and living customs strongly. It is possible that the rapid environmental change gives a negative influence on the development of their identity. Attention should be paid to the fact that the rapid modernization of the social environment has brought about an identity crisis for the aborigines and raised the crime rate. The people of Aeta tribe have already lost their native living environment and are under a high tension because of the need to adapt themselves to a new environment. Orderly mixed residence should be planned in order to remove their worries as far as possible. One of the

keys to the successful solution of this problem is how to obtain positive assistance from NGOs, such as the League of Senior Aeta Residents of Zambales (LAKAS) and the PRRM (PHILIPPINE RURAL RECONSTRUCTION MOVEMENT).

(6) Resettlement construction sites and anticipated secondary disasters

The resettlement committee selected the construction sites for the highland and lowland resettlement programs from the viewpoint of secondary disasters on the basis of the assessment made by the PHIVOLCS (Philippine Volcano Earthquake Research Institute). However, at SAN MERCELINO, where the construction of a lowland resettlement site is planned has a high possibility of mud flows according to a field study and other information. It is one of the dangerous areas in the secondary disaster forecast map which was made by the PHIVOLCS. As of January, 1992, the position of SAN MERCELINO was changed from a resettlement site to "temporary resettlement site", but the construction plan has not been changed. The construction of the BASA AIR BASE resettlement site has already been started. However, BASA Air Force Base, which is next to this site, is the first governmental facility which was moved after Mt. Pinatubo's eruption. The nearby river has already been buried by volcanic ejecta. A part of its basin has already been damaged by mud flows. It is slightly outside the dangerous areas in the secondary disaster forecast map, but some experts regard it as a dangerous area on the basis of the assessment made by the U.S. construction battalion.

In any event, since the entire disasters including secondary disasters has not been completely disclosed, it cannot be said that even the other lowland resettlement sites are completely safe.

On the other hand, highland resettlement sites are safe from direct secondary disasters. However, they may not have accesses to the lowlands during the rainy season. For example, CAWAG, DUEG and IRAM settlement sites have such a possibility. If they have no accesses to the lowlands (administrative organizations, markets, etc.) for a long period, all the social services by governmental organizations will be influenced.

(7) Effect of the dissolution of TF on resettlement sites

The TF is an organization which is attached to the President's Office. There exists the possibility that it could be dissolved before or after the presidential election and the general election of the Upper House and the Lower House in May, 1992. It is necessary to study what will happen to the resettlement program, specially to the management of resettlement sites, if the TF is dissolved. At present, the resettlement sites are managed by the Regional Resettlement Site Committees which consists of the local staff of ministries and agencies belonging to the TF's Resettlement Committee, regional administrative officers (provinces and states) and site managers who are dispatched by NGOs and the TF. They are to be gradually incorporated to existing administrative divisions and transferred to local governments. However, local governments' participation in disaster relief projects has been limited. They have hardly participated in any program which involves a budget expenditure. Therefore, the resettlement sites must be operated by site managers and the staff of central governmental agencies. However, they also have the following negative factors. The employment period of a site manager is 1 year. It is renewed when it is judged as necessary. However, what will happen if the TF is dissolved? Among the central governmental organizations, only the DSWD sends employees who reside in resettlement sites. Unless the Central Government gives a reliable support, local governments will be unable to give administrative services to resettlement sites which have various problems. When these factors are considered, there are worries that central and local administrative assistance to the resettlement sites may be discontinued. This will give a serious influence especially to highland resettlement sites.

Assistance is given even to terminal resettlement sites at present because international aid organizations, NGOs and governmental officers are interested in them. It is highly possible that they will be neglected after a certain period when the interest in them becomes low in view of the situation in the Philippines. It would be regretted if nobody has an outlook for the future of the resettlement sites.

(8) Comprehensive evaluation of resettlement program

The resettlement program has various problems as pointed out above. It cannot be said that coordination between the CTF and the TF is sufficient. These factors lead to a negative

evaluation for the resettlement program itself for the following reasons. They satisfy the victims' potential needs only partially, qualitatively or quantitatively. They meet only a part of the needs. The program has not addressed the dangers of secondary disasters. The TF and the CTF have not made sufficient coordination from the viewpoint of the need for making a comprehensive resettlement plan.

Most of the problems which the resettlement program does not solve will be solved by resettled victims' own efforts. In other words, they will move to other regions, Manila metropolitan district and other local cities and live in slums. These changes will begin as soon as resettlement sites are constructed and the settlement is promoted strategically. The problem is anticipated to become more serious.

1-3 Current State and Needs of Infrastructure in Resettlement Sites

(1) Highland resettlement sites

The same type of construction works is adopted to all the highland settlement sites. All the structures are simple and their construction works would be not difficult. They are planned, designed and constructed mainly by the NHA. Roads and deep wells are constructed by the DPWH at some sites. Common standard drawings are used for all the sites. The difference among the sites is only in the plane layout. The plan and the design are appropriate for the resettlement program which must be started quickly. Since the quantity of the works planned for each site is small, progress state is very high. About 85% have been completed on average.

Much progress has been made with the construction of access roads, government centers, tribal markets, productivity centers and playgrounds. This construction has been completed at most of the sites. Housing kits are being brought to the sites as the final stage. The average progress state at all the sites is about 50%. Immigration has been started to sites where housing kits have been brought in. All the sites are ready for immigration at present.

The problem is the state of access roads to the sites. In other words, the subgrade is not compacted sufficiently and the surface is not treated. Some roads have no drain facility like culverts and gutters. They will be dangerous during the rainy season. The NHA, which is responsible for road construction, knows that these roads are constructed for the purpose of carrying construction materials to the sites and that their service life will be only 2 to 3 years. The NHA has a plan to improve these roads when they repair destroyed parts after the next rainy season.

Living water is obtained mainly from deep wells. However, there are not enough deep wells. The total number of deep wells which are planned at nine sites is 19. If it is assumed that one well supplies water to 500 persons, 120 wells are necessary for 60,000 prospective immigrants. This means that about 100 more wells are necessary. Of course, deep wells are not the only water source. For example, nearby streams can be used as well. However, the shortage is too large. The population is increasing gradually at all the sites. Even drinking water will become insufficient for the current immigrant population, specially during the dry season.

(2) Lowland resettlement sites

The construction works which are planned at lowland resettlement sites consist only of horizontal plans, such as land preparation, roads, service water and sewage facilities. In other words, they contain no vertical plan such as houses and power. Regrettably, it is only close to a housing land preparation project since the plan has no consideration for the resettlers.

This program is executed by the NHA and the DPWH. A local power public corporation will be in charge of power, but no concrete plan exists at present. Houses are to be constructed by immigrants themselves.

All the works at each site are just about to started. The construction of some sites has not started because of the problem of land acquisition and budget though a construction company has been selected.

It is not possible to point out problems about the state of these resettlement sites since their construction works have just started. However, the problem lies in the resettlement site program itself rather than the state of these sites. In other words, it is quite questionable whether a project like housing site preparation work can be called a resettlement site program.

1-4 Current State and Needs at Resettlement Sites in the Field of Livelihood

(1) Highland Resettlement Sites

At the highland resettlement sites, it is impossible to make a living without food ration until crops are harvested from the farmland which is newly reclaimed by the migrants. The task force has given various training at the production centers in the resettlement sites to enable migrants to make a living. However, this program has been reviewed due to some problems, and there is no future outlook at present because resettlement sites are far from urban districts and a comprehensive care from production to sales is difficult.

For example, a basket making project was started at the BAQUILAN resettlement site which is in the best state among all the resettlement sites at present. However, the production has been discontinued because materials are unavailable though people have a strong desire to work. Although the enterprise which gave an order sent trainers and assured the purchase of baskets, the project has been stopped by the DTI.

In other cases, the following problems were found: Difficulty in obtaining raw materials at resettlement sites and difficulty in purchasing raw materials by cash; high cost of transporting materials from raw material processing factories in Pampanga and Manila as well as the high cost of transporting products to markets; trouble communicating with enterprises (e.g. export enterprises in Pampanga) which submit orders.

Although people are given training in production, products cannot be sold because their costs become too high. As a result, production must be discontinued.

The resettlement sites are not suitable for such social production projects because they do not have adequate means of transportation, communication and distribution due to their geographical conditions. It is questioned whether it is adequate to introduce commodity production which requires an investment (purchasing materials by cash), and which demands a business ability based on the principle of price setting = cost calculation. The more basic question is whether the products can be sold and produced in sufficiently large quantities to obtain the necessary income. In other words, the basic concept that should be taken for materializing a means of livelihood has been ignored.

Projects which are based on a strategy, but do not have concrete arrangements were found at many places. This problem was common to all the refugee centers and resettlement sites. In view of the current state of the means of livelihood, it will be necessary to continue the distribution of food rations at resettlement sites for quite some time. It seems that the problem of re-settlers' livelihood and distribution of food rations be reviewed fundamentally, including the Aeta's conventional means of livelihood.

(2) Lowland resettlement sites

No lowland resettlement site has been constructed at present. Therefore, the task force's programs will be studied here with consideration given to the geographic condition, as well as other conditions of the sites. Projects in the rehabilitation stage are in progress at refugee centers. On the other hand, the task force livelihood Committee's programs for the lowland resettlement places have the following characteristics in terms of scale and quantity: First, it involves large-scale investments; secondly, the central government will provide facilities and funds, but the organizations which own the business and obtain loans are private organizations; third, it takes the form of a tie-up program with a counterpart, but in actuality it is led by the Task Force and no counterpart has in fact been selected. These lowland resettlement site livelihood programs will be studied hereinafter.

1) Productivity Center Concept

The productivity center concept symbolizes the Task Force's basic strategy of converting disaster-stricken areas structurally from agriculture to industry. It is the nucleus program in the livelihood field at lowland resettlement sites. The construction of productivity centers is planned at 14 resettlement sites. Seventy-five factory units with buildings will be constructed in total. One unit will absorb 300 employees. The appearance of labor-intensive type industry is expected. Preferential treatment will be given for investment. Training centers for unskilled workers are planned as well. If the program is promoted as

planned, employment opportunities for 22,500 persons (one person from every family at resettlement sites) will be created.

However, the problem is how many enterprises will agree to participate in the production at these factory units. The forecast of secondary disasters is still uncertain, although they are regarded as inevitable. If the business world is reluctant to make new investments in areas where there is the possibility of secondary disasters, one cannot be optimistic about their participation. Even if the number of participating enterprises increases gradually as the situation settles, those who move from refugee camps will be faced with hardships from the first day. If these principal means of making a livelihood are not implemented as planned, it will be hard to make a living at the resettlement sites. Since most of those who are waiting to go to resettlement sites are farmers and poor urban workers, this factor will discourage their immigration to resettlement sites. It is highly possible that poor and petty refugees will be neglected under the program.

The Task Force made a large revision to the location and scale of productivity centers after this study was started. According to the information which was announced on January 6, 1992, the construction of a productivity center at SAN MARCELINO in ZAMBALES Province was discontinued, but SUBIC in ZAMBALES Province and HERMOSA in BATAAN Province were added to the list as locations for productivity centers. A large productivity center having waste water treatment facilities is newly planned at TARLAC in TARLAC Province. The heavy focus on TARLAC may not be proportional to the geographical distribution of refugees.

2) Comprehensive Livelihood Improvement Cooperative Association

This is a 10-year rural industry type pilot project named LEAP (Pinatubo Livelihood Emergency Assistance Program) and it is promoted under the leadership of the TLRC. Four projects (poultry farming, livestock, rice cleaning, fisheries) are to be started at some resettlement sites as a cooperative association type business. The productivity center concept is in the industrial field, but this project is in the agricultural and fisheries field.

The concept of this project exists at present, but neither the task force, nor the TLRC has settled on a policy. The Livelihood Corporation (LIVECo), which is the livelihood project's related organization in the President's office, is formulating a similar project.

The Task Force sets the productivity center concept and comprehensive livelihood cooperative association concept as the major livelihood programs at resettlement sites. However, it is questionable whether they can meet refugees' short-term needs from the standpoint of actual immediate effects. Various livelihood projects are planned with NGOs as partners. However, they have not been promoted sufficiently to be evaluated. The evaluation must depend on the future progress and study of such programs. In the current state, it is extremely difficult to predict that the social and economic environment of the resettlement sites will sufficiently provide the means and opportunities that are necessary for the people to make a living. The refugees who have a desire to immigrate to resettlement sites are obliged to start at a disadvantage. The current situation is too severe for these people to obtain the means for making a living without any assistance. There is concern that refugee camps may become permanent establishments and slums if the migration to resettlement sites is not promoted smoothly.

1-5 Current State and Needs at Resettlement Sites in the Social Service Field

(1) Highland Resettlement Sites

Basically, the highland resettlement sites are for the minority (Aeta tribe). Aeta people up to the third generation of mixed blood are accepted. Most of the nine resettlement sites that are planned are under the DENR's jurisdiction. They are located in national forests and mountains and these sites will be rented to immigrants. At present, the two sites in Pampanga are in the stage of basic preparation (ground leveling, etc.) or in the state of land acquisition negotiations. Those who plan to immigrate to these sites are obliged to live at refugee centers. The migration to the seven sites in Zambales and Tarlac has started. However, basic facilities, such as access roads, are still in poor condition. Houses and public facilities are being constructed.

Facilities, such as a school, a nursery school and a community center, are to be constructed at all the resettlement sites. In some cases, no teacher is assigned or the number of teachers is insufficient, even though a school building has been erected. Social workers, who are operating nursery schools, point out that facility capacities are too small for the number of children who need the services. From a long-term viewpoint, their curricula and programs should be formulated with a consideration given to the Aeta peoples' culture.

The lack of water supply facilities is a serious problem at many resettlement sites. At many sites, sanitary facilities, such as toilets, are installed, but they are not functioning due to the shortage of water. As for health and medical care, the disease rate has decreased because the settlers escaped from the extremely poor living environment of refugee centers and because the dry season has started. Paramedical staff reside at health posts and pharmaceuticals are supplied periodically. Doctors and nurses patrol the sites periodically as well. However, they conduct only basic treatment. Sufficient service is not being provided to the Aeta people who are not familiar with modern medical care (or even have a negative attitude toward such care). It seems that health and medical care activities are supported mostly by local doctors and nurses and by voluntary cooperation rather than by the DOH and NGOs.

The difficulty of creating employment is pointed out as a problem at almost all the resettlement sites. Most of the migrants still must depend on food supplied by private groups or on FFW and CFW supplied by the DSWD. The DTI and NGOs are making attempts to increase the peoples' income by promoting handicrafts production (making paper, baskets, etc.), but in many cases they often end up giving training without bringing about a means of income for the people. The marketability of these products is also questionable.

When resettlement sites are studied from the viewpoint of community regeneration, it is seen that this community function is lacking. Most of the Aeta people who have moved to resettlement sites came from the most heavily damaged areas. It is suspected that they are in an unstable psychological state because of the rapid change of environment, the experience of losing family members and relatives, and moving frequently to different refugee centers and prospective resettlement sites. The traditional role of a leader is also in crisis. No leaders are present at some sites, while many leaders coexist at one resettlement site and they must engage in cooperation and coordination. Sufficient community unity cannot be expected at present. The DSWD and NGOs have initiated psychological counseling and programs for community formation (leadership training, BBB meetings, group activities for women and youths, etc.). However, priority is now given to the construction of houses and the acquisition of food and incomes, which are seen as more urgent problems.

However, the existence of a stable community is very important not only for obtaining information and services from the government, but also for promoting positive participation in all the activities within resettlement sites in the future. Since it is one of the factors that influence the long-term success or failure of the resettlement program, efforts in this field must be made as a part of, or in parallel with the livelihood program in the near future.

1-6 Current State and Needs at Refugee Centers

(1) Social Services Field

The government is trying to construct resettlement sites as quickly as possible. Movement to highland resettlement sites is started as soon as the essential facilities are completed. However, foundation works have been started only at five of the twelve lowland resettlement sites, which are planned for non-highland (minor tribe) victims. Even the site in the most advanced state of progress will not be completed (be ready for settlement) until the end of April, 1992. In reality, some of the prospective settlers to highland resettlement sites and most of the prospective immigrants to lowland resettlement sites still live at refugee centers.

The number of deaths at the refugee centers reported by the middle of October was nearly 500. More than 90% of the dead belong to the Aeta tribe. Children below the age of ten account for nearly 80% of the fatalities. The main causes of children's deaths are measles, diarrhea and pneumonia. The shortage of fresh water and sanitary facilities brought about a critical state at refugee centers during some periods, but this problem has diminished at those refugee centers where residents are decreasing. However, it cannot be said that health and medical services are sufficient, even at present. The problems of respiratory trouble, children's

diarrhea and malnutrition still exist. The social service committee of the task force plans to continue the medical care and supplementary nutrition programs at the refugee centers. In cases of refugee centers established at public facilities in cities, the situation has not been improved because it is not easy to construct the facilities which are necessary for such centers. The refugees are terribly worried and dissatisfied with the fact that the government's aid is decreasing while their conditions have not improved.

Many of the victims at the refugee centers wish to immigrate to resettlement sites as quickly as possible. However, it will be difficult to satisfy their demands because capacity of the lowland resettlement sites is limited, settlers must purchase housing lots, and no farmland is available. It cannot be said that the people at the refugee centers are given sufficient information about these conditions related to resettlement sites. It is anticipated that confusion and dissatisfaction will arise among the residents when the resettlement program is actually executed.

The biggest problem at the refugee centers is providing a livelihood for the refugees in the immediate future. The government stopped food supplies in December, based on the judgement that the emergency situation is over. The FFW and CFW, which replaced the Government's food supplies are not available at all the refugee centers. FFW and CFW are insufficient for sustaining the residents even when they are available. Therefore, many of the residents at the refugee centers must depend on NGOs' food supplies or try to find employment opportunities in adjacent areas. However, employment opportunities are scarce. If this situation lasts for a long period, it may breed social unrest both at the centers and in the adjacent areas. There is a critical need for planning a stable means of livelihood for the disaster victims.

(2) Livelihood Field

According to the DSWD, about 26,000 families (120,000 people) lived in and around the 126 refugee centers six months, after the occurrence of the disaster (Nov. 5, 1991). The number of refugee centers was 865 when the disaster occurred. Although the number of refugee centers decreased to 15% after half a year, the total number of refugees has changed little. The Aeta people were quickly accommodated in resettlement sites (except in Pampanga), but most of the lowland residents remain at the refugee centers. It appears that their hardships will last for a long period. Since the Philippine Government stopped food rations at the end of December, the refugees will not have enough to eat unless they find a means to make a living.

What kind of occupational experiences do these refugees have? This is an important factor for formulating a livelihood program for them in future. The DSWD's statistics show some characteristic trends about the refugees' previous occupations. The first characteristic is that the percentage of farmers is high among the refugees compared with the original ratio of farmers in this region. Those engaged in the primary industry (mainly farmers) account for 22% of all the victims, according to the statistical study. However, they account for about 36% of those at the refugee centers. This figure indicates that clear livelihood measures must be planned for these farmers who cannot utilize their experiences and skills without owning land. This indicates the need to study adequate measures for them, including changing occupations and moving to another region.

The statistics also indicate an overwhelmingly large percentage of petty workers of the tertiary industry. Physical workers like laborers (accounting for 60% of those engaged in the tertiary industry), street vendors, service workers, drivers and repair workers account for about 26% of the refugees. Those of miscellaneous occupations, the unemployed and those having no occupation account for 36%. When these two groups are put together, about 60% of the refugees belong to the tertiary industry. These jobs cannot be created if the regional economy is depressed. On the other hand, those engaged in the secondary industry, such as carpenters and craftsmen in the manufacturing industry, account for less than 3%.

The above study of refugees from the viewpoint of livelihood reveals that this disaster struck a fatal blow to the primary industries, such as agriculture, and brought about serious hardships to tertiary industry workers, who already have a weak position in the social structure and are most susceptible to economic dislocation.

In the field of livelihood, various governmental and private activities have been planned and conducted in order to help the disaster victims, especially the residents at the refugee centers, who meet the above description. The following section studies how much these activities have met the people's needs and what possibilities are available.

1) Emergency /Short Term Livelihood Improvement Measures

The bamboo seedling production project is the main project of the task force's CASH FOR WORK. It aims to provide about 4,000 families with bamboo stumps in pots (2,000 pots per family) and pays each family one peso per pot monthly, for nine months, for raising the seedlings. Bamboo which grows is planted on river banks for bank protection and sold for industrial use and handicrafts. About 1.5 million seedlings have been distributed to 3,525 refugee families. This means 425 seedlings per family on the average, which is slightly over 1/5 of the original plan.

2) Relief Works for the Unemployed

The relief works for the unemployed include the DPWH's road ash removal works, river reinforcement works and a part of the NHA's resettlement site land preparation works. They are conducted with the DOLE's cooperation. The form of these relief works is the same as that for the CASH FOR WORK program. About 1,170 people have participated in various relief works, which pay 50 pesos per day for 20 days.

3) Production Projects for Livelihood Improvement

These projects aim to give the refugees training for producing various commodities and provide financial assistance as well. They are conducted by various organizations, such as the NMYC, the DTI, the DSWD, and the DOST. Until now, 135 projects (156 types of training) have been conducted for the refugees within and outside the refugee and resettlement centers under NGOs' cooperative assistance. In order that this training can lead to production which can be marketed, the DTI of the Livelihood Committee has asked export enterprises in the region to give orders to refugee groups, and to send trainers to the centers so that goods can be manufactured under the trainers' guidance. The training given by various organizations varies greatly in concepts and items produced. Some of the training is similar to vocational training, which will be useful to refugees for making a living after leaving refugee centers, while other training (such as smoked fish production training, called DOST) is immediately useful for making a livelihood.

According to the Livelihood Committee's progress report (dated January 6, 1992) on all projects, 69 to 93% of the projects have completed the training stage and are entering the stage of production and sales. In other words, they need funds for the business and receiving orders from enterprises. Unfortunately, the actual accomplishments of these projects are questionable according to a limited study. It is true that various commodities have been produced through training, and fairs for these commodities have been held in department centers, supermarkets and trade centers in Manila in order to promote their sales. These goods are also sold at retail stores and tax free stores. However, the following results were obtained from the study team's hearing conducted at DTI and DSWD regional offices of Region III after the Livelihood Committee's report of January 6. In reality, the DSWD was unable to give training to a sufficient number of people because of the budget shortage. The DTI is now unable to obtain cooperation from enterprises in Pampanga State because of the cost problem of transporting materials and products to remote places, and the trouble of selling products produced with cooperating enterprises' materials to local buyers. The orders from other cooperating enterprises (gifts, sewn articles, dolls, Christmas goods, etc.) are temporary. As a result, most of the projects are not operating at present. The volcanic ash craftwork production group, which is supported by a small number of NGOs (such as the Angeles Board of Commerce and Industry) is operating, though not so smoothly. Those groups, which are still operating in spite of various difficulties, are faced with the problem of finding markets for their goods.

According to the volcanic ash craftwork production group, the commodities are designed by designers at the DTI's design center, using samples which are bought at department stores in Manila. They think the problem lies not in the design, but in the fact that nobody buys the commodities. The DTI's employees are in charge of cost calculation. Materials are purchased from specific stores in Manila. The department store which held the fare said the price is too high, but this cannot be changed because productivity is low. The daily production per worker is 10 (the group has 10 members). Since the goods have been successfully sold at the present price to foreigners and rich individuals at charity markets, they have no plan to change the price.

One of the market limitations is obviously that the prices of products are too high in comparison with ordinary market prices. However, their experience of selling products temporarily at charity markets in Manila has given them a wrong (old) idea about the market. This has become an obstacle to the projects. If "the sentimental value of goods produced by Pinatubo victims" fades away after some period, they will discover appropriate price levels after products are rejected by the market, which does not buy expensive goods. In any event, many of the livelihood programs which have been prepared are faced with similar basic problems. The difficulty of marketing lies in the fact that "commodities cannot be sold simply by producing and displaying them." The business training is required to make a benefit.

Many of the livelihood development projects which were conducted before the disaster for the vitalization of rural areas and for the relief of the poor class failed, because of this lack of understanding about marketing. The current state of the regional economy and the lack of the market function are a major obstacle to the development of regional society in the Philippines. A similar trend is observed in the livelihood projects for Pinatubo victims. For this reason, it will be necessary to make a fundamental review of a series of livelihood projects, including the projects' factors of success and failure. This is a very rare opportunity in which a large number of cases can be studied. In any event, the actual state is far from the optimistic view indicated in the task force's report.

* <Marketing and Market Studied from Cost Composition>

As an example, let's take up the cost calculation sheet for the stuffed dolls which are produced in the DSWD's training course. The criteria for determining the labor cost and the overhead cost are not realistic. The labor cost is estimated 50% of the total material cost. This means that the labor cost is small if the cost of materials is small. In other words, labor cost is not regarded as the combination of skill and work. Under this principle, the minimum wage system cannot be applied.

The overhead cost is set mechanically at 12%. This may be because they are produced in the DSWD's facility. But this will not provide a basis for calculating the necessary expenses for sound operation, for setting the minimum prices, and for studying the balance with the production scale when women start the work on their own in the future. The prices of products from independently operated women's centers may become lower than those for the DSWD's training center. In such a case, a price competition will arise between them. In another case, graduates may have to sell the goods without any profit by following the prices set at the training center.

If the role of the training center is limited to the guidance of skills, and basic management principles about production and sales are ignored, it will be impossible for trainees to start working independently.

1-7 Current State and Needs of People Who Returned to Their Previous Homes

(1) Social Services Field

Many of those who moved temporarily to refugee centers due to an ash fall or mud flow have already returned home and are restoring their houses and farmland. It is reported that facilities like schools and hospitals in the recoverable areas are nearly reconstructed or repaired. In some cases, local governments give some financial aid for the restoration of houses. However, it cannot be said that all the disaster victims are given sufficient aid because of differences in the state of the damage and the economic conditions before the disaster. In many BBBs, roads and community centers are being restored by the residents themselves. The government gives no systematic aid to these voluntary works.

Since most of these people are farmers, the delayed restoration of farmland and agricultural facilities, such as irrigation facilities, is becoming a problem. The assistance from governmental organizations is not given uniformly to all the farmers. Small independent farmers who do not belong to any organization, like a farmers' association, have no route with which to receive assistance. This is creating large dissatisfaction among these farmers.

In the areas damaged by mud flows, restoration works were started after the dry season began. Although the restoration of roads, bridges and rivers has commenced, they are far from

the state they were in before the disaster. There are worries over the means of communication and transportation to be used during the rainy season of this year. Since information about disaster forecasts during the rainy season in the following years is not sufficiently available, countermeasures for secondary disasters cannot be planned. This causes concern among the residents. The alarm and evacuation system is not functioning well in many BBBs. The NGOs which are operating in these regions point out a strong need to improve this system and to provide regional disaster prevention education and training.

(2) Livelihood Field

The current state of the projects for lowland sufferers, including the residents of refugee centers, is discussed here. Therefore, many of the projects are emergency or short-term livelihood improvement measures.

1) Agriculture Related Projects

The DA conducted an ash fall farmland project under which farmland damaged by a three to six inch deep ash fall was plowed with large machines. They conducted a fertilization project for farmland where the ash fall is less than three inches deep. They also distributed vegetable seeds, and fruit tree seedlings, and protected livestock. In addition, they established a demonstration farm in every state. These demonstration farms are to be the centers for experimental cultivation methods and spreading skills.

2) Placement Service

DOLE conducted an employment promotion project for the unemployed. They interviewed about 40,000 people who are seeking jobs within and outside the country and referred job offers at 19 places, such as Angeles City, for five months. These people were registered in the job applicants data bank. Overseas employment has been given to 624 persons. Employment procedures for 1,255 persons are in progress. Since the American Chamber of Commerce and Industry has decided to employ about 300 persons, the project created 2,200 overseas workers in total. As for domestic employment, 711 persons were employed in the region. The project was able to find jobs for 7.5% of the job applicants. The fact that regional employment was only 1/3 of the overseas employment indicates the difficulty of finding jobs in this region. The DOLE provides skill training to those who want to be employed and management training to the unemployed who want to do business on their own account.

3) Special Industrial Reconstruction Loans and Small Revolving Fund and Starting Fund Loans

The TLRC, the DOLE, the DTI and the DSWD of the Livelihood Committee made special loans from the President's task force fund. Many of these are special loans for industrial restoration and reconstruction, and small loans for revolving funds or starting businesses. For example, the TLR made loans to livelihood improvement project groups through NGOs, and made restoration and rehabilitation loans to disaster-stricken enterprises. The DTI made loans mainly to help NGOs, street vendor associations and various trade groups. The DOLE gave livelihood improvement loans, particularly to those who lost employment at the base. The DSWD made loans for starting businesses to those who wish to be self-employed. These organizations have tried to give assistance to a wide range of beneficiaries by dividing the targets. The government affiliated banks made preparations for supporting these restoration and rehabilitation loans by setting special loan limits for the disaster victims. However, the loans which were executed by the related ministries and agencies account for only 10.6% of the limit as of December 6, 1991. It is suspected that the loans offered under preferential conditions are not executed because the business world is reluctant about making new investments or additional investments in disaster-stricken areas at this current stage.

Chapter 2: Recommendations

2-1 Summary of Recommendations

Various problems are foreseen with the Philippine's Mt. Pinatubo disaster restoration and reconstruction program. The Task Force gives high priority to eight items, but it seems to be difficult to accomplish the targets sufficiently in any of them. This is accounted by the highly center-oriented administrative system of the country's governmental organizations in addition to the background factors discussed in the section of the trend of supporting organizations. In other words, the problem may lay in the basic system.

Since such a basic problem connected with the execution of aids becomes a strong obstacle specially at the time of disasters, it generally involves various difficulties. At the same time, the capability to execute aids flexibly becomes an important issue. Since the situation is in confusion, it will be essential to obtain adequate information and to take flexible actions. The study team makes the following proposal in consideration of these factors.

The proposal was summarized from the viewpoint of short, intermediate and long term measures as well as from the viewpoint of need and feasibility with the following basic ideas.

- 1) Even if each program has various defects and our attitude is negative to a program as a whole, we should give a priority to the relief of sufferers and take short term supporting measures within the possible range.
- 2) The disaster-stricken areas and the restoration and reconstruction system are in confusion. In addition, possibilities of a secondary disaster are high. Therefore, it is necessary to obtain information continuously and to take flexible actions. For this purpose, it will be effective to improve the support by dispatching experts and Japan Overseas Cooperation Volunteers (JOCV).
- 3) Measures for helping the disaster-stricken areas should be planned in consideration of an anticipated secondary disaster.
- 4) Not only short term measures, but also intermediate term and long term measures should be planned.
- 5) The range of the cooperation should not be limited to the Philippine Government's restoration and reconstruction program.
In other words, support measures should be studied on the basis of the information about the entire damage that was brought about by Mt. Pinatubo eruption.

(1) Fields Requiring Japanese Assistance

<Short and Intermediate Support Measures>

- 1) Improving the state of basic needs (water supply, livelihood etc.) and supporting the supply of basic social services (education, health and medical care etc.) at the resettlement sites (highland) which are planned at present
- 2) Studying the country's disaster prevention system, including communications, medical care and rescue operations during emergency, and supporting the establishment of at least an essential system (including the related activities)
- 3) Supporting the plan to construct resettlement sites and relocation centers in the region under the DAR's jurisdiction (including the regions other than the three disaster-stricken states) in order to promote the resettlement of refugees (specially farmers)

<Long Term Measures>

- 4) Cooperation for the formulation of a comprehensive disaster forecast and restoration plan
- 5) Cooperation for the development of West Central Luzon and for the formulation of a development master plan in each sector (Strategic and long term action)

(2) Concrete Proposals for Japanese Government's Aids

(Short Term Measures)

- 1) Supplying funds, machines and materials for securing water sources in highland resettlement sites and disaster-stricken communities
- 2) Supplying funds, machines and materials, such as portable pumps and excavation rigs, which are necessary for irrigation in order to promote the production in disaster-stricken farmland
- 3) Supplying communication equipment (radio equipment etc.) for the use at the time of a disaster and giving engineering guidance on their installation, maintenance and operation
- 4) Supplying food to sufferers (to sufferers at resettlement sites and refugee centers)
- 5) Personal help (dispatching the JOCV) for improving the living, health, hygiene and education for sufferers at resettlement sites and relief centers

(Intermediate Measures)

- 6) Development study for agricultural rehabilitation in Zambales which received the most serious damage
- 7) Rural development study, infrastructure construction and technological guidance for the refugee resettlement program at DAR settlement site

(Long Term Measures)

- 8) Study for forecasting secondary disasters and formulating a comprehensive restoration plan
- 9) Study for formulating a long term restoration and development plan

For more concrete information, refer to the following sections.

2-2 Possibility of Japan's Cooperation for Refugee Resettlement Program

2-2-1 Living Infrastructure Field

(1) Highland Resettlement Sites

Since the migration to highland resettlement sites has been started, the problems at these sites have become clear. The largest problem is the shortage of living water. The most effective way for Japan to cooperate for solving this problem will be to supply well drilling machines and to construct simple service water systems by excavating wells.

Concerning "Resettlement Site and Disaster-Stricken Community Water Supply Project", the study team heard that the NEDA has submitted a similar request to the Embassy. This project was taken up at the donors' meeting as well. The necessary number of wells should be studied in more details.

The highest priority should be given to the highland resettlement sites. This program can be evaluated as a good project because it covers not only resettlement sites, but also disaster-stricken communities and it has high urgency and large beneficial effects.

(2) Lowland Resettlement Sites

This program has basic problems, including the site selection and land acquisition. Construction works were only just started where possible. Therefore, no possibility of Japan's concrete cooperation can be conceived at present.

The above water supply project which was proposed for the highland resettlement sites can be extended to lowland resettlement sites if it is judged adequate in view of the future lowland resettlement site program.

2-2-2 Livelihood Field

The resettlement program which is being promoted by the Philippine Government and the Task Force has great difficulties as reviewed in Chapter 1. The possibility of Japan's cooperation was not easy to find in the livelihood field. This is accounted by the following

three factors. First, it is questionable whether the conventional livelihood improvement projects, namely those which were started before the disaster, have been functioning effectively. Secondly, although the basic framework and the policy of disaster restoration and reconstruction exist, their grounds were not clear. Finally, it was difficult to find programs which were planned on the basis of sufferers' needs. In other words, it is difficult to support such programs that do not have sufficiently clear grounds and targets.

If Japan still has any possibility of supporting the program in spite of the above factors, it is proposed to support the livelihood improvement projects which are carried out by local governments and NGOs. However, these projects do not match the JICA's current schemes of cooperation because most of them are small projects and financed by loans. If this becomes an obstacle to livelihood related aids in future, it will be necessary to make some revision or to consider a new system.

In sum, not many quickly effective or feasible projects could be found in the livelihood field. The projects which can be conceived include the dispatching of JOCV volunteers to resettlement sites for making comprehensive cooperation. However, Japan has a large possibility of cooperation for reconstructing the entire disaster stricken areas, including the resettlement sites, from a more intermediate viewpoint. This will be discussed mainly in the subsequent sections.

(1) Highland Resettlement Sites

Possibilities of Japan's cooperation for the Aeta tribe and mountain farmers in the highland resettlement sites were studied. It was concluded that Japan's cooperation will be basically limited to the field of agriculture and forestry in view of their conventional livelihood pattern. Large-scale production is not possible because these resettlement sites are in highlands or mountains. The handicraft production which is being promoted by the DTI is operating on a very small scale. It will be difficult to give a direct cooperation to such projects.

However, the means of transportation (vehicles) and the means of communications (radio and cable communication equipment) are essential for smoothly operating various livelihood programs because of the geographical conditions of the highland settlements. Even though they may not own vehicles for bringing in materials and carrying out products, they must at least have means of communications for calling vehicles from the bottom of the mountains. Emergency food and medical and pharmaceutical supplies should be stored in provision for a disaster and for an emergency situation during the rainy season. They are basic necessities which have even larger importance than livelihood. Grant aid cooperation can be applied to them.

1) Dispatching JOCV (Japan Overseas Cooperation Volunteers) team

A JOCV team which cooperates with the sufferers in their efforts to make and improve a livelihood will make a large contribution to them. JOCV volunteers who can meet the victims needs in their specialized fields will play the role of an "open window" which connects them to the society. They will play a valuable role in the entire disaster restoration and reconstruction program. A JOCV team must consist of members related to livelihood improvement (art, handicraft, livestock, forestry, agriculture etc.) in addition to members specializing in health, social welfare, village development and teaching. As social workers, they will have to face all kinds of problems in the resettlement sites. Therefore, it is strongly desired to send not individuals, but a team. At the same time, it is desirable to send experts which can take care of various problems of the team as well.

The organizations to which JOCV volunteers can be dispatched include ministries and agencies, such as the DSWD, the DA and the NMYC, local governments and NGOs. It is important to select an organization or a combination of organizations which can effectively utilize each member's specialty. This is essential for making large accomplishments by sending JOCV members. For this reason, the local JOCV office has an important role.

The Aeta people have been discriminated by lowland people and their position may be weak. JOCV volunteers previous activities have been evaluated highly by the Aeta people. This cooperation has a large future potential.

- 2) Mt. Pinatubo Restoration and Afforestation Program for Securing Victims' Livelihood
Aeta people have conventionally been engaged in afforestation in the areas around Mt. Pinatubo. The Task Force is promoting an agro-forestry program and a social-forestry program under the leadership of the DENR. These programs aim to recover the natural environment of the mountains around the resettlement sites and the Aeta tribe's living environment by utilizing their experience. Disorderly deforestation has decreased forests and promoted forest destruction not only in Region III, but also in the whole country. Forest recovery is a large national problem. Since these projects help Aeta people make a living by assigning them to afforestation work, it is highly significant to support them. The Forestry Development Project - Watershed Management in Pantabangan and Carranglan (JICA's Project-Type technical cooperation) has been in progress for many years in Nueva Ecija State. In view of the accumulation through this project, Japan has a large possibility of cooperation in the Mt. Pinatubo affected region like this island. The range of cooperation will start from the installation of sapling rearing facilities, technology guidance and must be extended to the promotion of afforestation projects and the formulation of local governments's afforestation projects. Close cooperation with the JOCV team will be important for spreading the technology and continuing the activities. In consideration of the administrative system after the revision of the Local Government Act and the change of the administrative organization of resettlement sites after the dissolution of the TF, it will be important to maintain a close linkage not only with the DENR, but also with the state governments, other local governments and NGOs.

(2) Lowland Resettlement Sites

Japan's cooperation in the lowland resettlement sites will be discussed in the section of refugee centers. This section is concerned only with the dispatching of JOCV teams and the possible cooperation in resettlement sites outside Region III or outside the jurisdiction of the Presidential Task Force.

- 1) Dispatching JOCV (Japan Overseas Cooperation Volunteers) team
It will be appropriate to dispatch a team, instead of individuals, to lowland resettlement sites and refugee centers. The reason for this is as stated in the section of highland resettlement sites. The difference from a team for highland resettlement sites is that members of agriculture and teaching will be excluded in the current state. However, their activities will depend on an advance study of needs and assigned locations or organizations. Although it is possible to select a resettlement site to which a JOCV team should be sent, many factors remain uncertain yet. Therefore, it will be difficult to determine the professional categories of a team from the beginning though health care and some limited fields will be essential.
- 2) Cooperation for Cabinet Task Force Resettlement Sites
The Presidential Task Force does not offer farmland to the farmers who lost their land due to the disaster as the blueprints at the resettlement center show. The basic governmental policy is to change farmers to other occupations instead of going back to agriculture. This is indicated by the fact that the DA manager of Region III said, "This disaster is a good opportunity to change this region from agriculture to industry." It may be difficult to provide arable land for more than 10,000 farm households immediately. However, there is not enough possibility of giving them training to change the occupation and to find employments to make a living, either. It will be too quick to have these farmers give up the possibility of using their farming experience for their future livelihood. One of the means to utilize refugee farmers' experience to extend the CARP (Comprehensive Agricultural Reform Program) which is being promoted by the (CTF) Cabinet Task Force. This can be extended to the resettlement program of Mt. Pinatubo affected people. The DAR's farmland reform and owner farmer creation projects have various problems, including the poor state of agricultural infrastructure in settlement places and the lack of farm management experience among immigrants. In view of these problems, it is possible to have farmers around Mt. Pinatubo become the nucleus at these settlement places because they have farm management experience. It will be worth studying the CTF's projects from this viewpoint.

The study team inspected Pag-Asa in Tarlac State under Mr. Hirodo (expert)'s guidance. This area was damaged by the ash fall. This model site has a history of nearly 20 years. This site can be a good model site not only for visits by prospective immigrants, but also for an inspection by cooperating organizations. It will give various basic information about agricultural resettlement sites, such as a period required for establishing a livelihood, farm management patterns, livelihood improvement means such as a side income, shipment and distribution, farm product processing industry, community formation and agricultural infrastructure.

Such an activity in the agricultural sector will remain important as one of the possibilities for various disaster restoration measures which are conceivable in many parts of the Philippines. It should be regarded as a model for the problem of local residents resettlement under comprehensive regional development.

2-2-3 Social Service Field

(1) Highland Resettlement Program

It is rather questionable whether the highland resettlement sites will become long-term settlement places because their migrants belong to the Aeta tribe and there is no prospect of adapting to the environment, finding means of a livelihood and moving the population. However, at least short term aids must be given quickly because the migration to these resettlement sites has already been started. Under the Philippine Government's plan in the social service field, importance is attached to basic social services, such as health and medical care, nutrition and education. They are seeking for cooperation for the actual supply of services. These needs are judged as urgent at present. However, the following long range view should be taken. In other words, it will be important to help the people provide these basic services on their own instead of simply giving regarding them beneficiaries and giving services. The sufferers who have immigrated to the resettlement sites have an extremely large need for stable livelihood means and they must form a regional community entirely. In view of these factors, it is desirable to take a comprehensive approach to the support of immigrants in this field. In other words, it is important to have residents participate in projects from the initial stage and to form organizations which will enable residents to carry on social service activities on their own.

The highland resettlement sites were selected as the direct target of Japan's cooperation.

- 1) Promoting and supporting local health care by dispatching JOCV teams
- 2) Supporting livelihood programs by dispatching JOCV teams
- 3) Evaluating and supporting social service programs for resettlement programs by dispatching JOCV teams

(2) Lowland Resettlement Program

Not only service water and power, but also the construction of public facilities, such as schools and hospitals, is planned for lowland resettlement sites. Since the Government gives a financial consideration for them, no large problem is anticipated in the social service field.

As discussed before, it cannot be said that this program itself is most suitable as a relief program for victims. It is suspected that those who can benefit from this program have some potential economic ability. Therefore, urgent aids are not so necessary. Aids should be extended rather to those who cannot be the beneficiaries of this program.

There are questions about the location and the safety of lowland resettlement sites because a secondary disaster is not accurately forecasted on the basis of a disaster analysis at present. According to the secondary disaster forecast which was made by the Japanese expert who is dispatched to the Soil Research Development Center, most of the resettlement sites which are planned at present are in the hazard region. In view of this forecast in addition to the above factors, Japan should not start aids too quickly.

2-2-4 Accommodation of Victims to States Other Than the Three States

Under the Presidential Task Force's sufferer resettlement program, highland resettlement sites (for the Aeta tribe) and lowland resettlement sites (for lowland residents) are being constructed and the immigration to them is being promoted at present. These resettlement sites were described before. However, the lowland resettlement program plans to provide land for about 26,000 families when the need for 40,000 families exists. No measure is being taken for about 14,000 families. In addition, the resettlement sites for 26,000 families are being constructed under the same policy as ordinary housing lot sales programs for low income people. In other words, housing lots must be purchased. (The payment will be 500 pesos per month for 25 years.) It is a prerequisite to get an urban type means of livelihood. It cannot be said that the potential beneficiaries' professional background and economic conditions are considered. Although 12 lowland resettlement sites are planned at present, some are faced with a land acquisition problem. In view of the above situation, it is not realistic to limit the construction of resettlement sites to the three states. This policy will be difficult to implement.

A secondary disaster is regarded inevitable during the following years and these three states will be most seriously affected by it. In view of this factor, it will be necessary to construct a resettlement site which can temporarily be used as a primary refugee center in another state. Even if the damage by the secondary disaster is smaller than the forecast, this resettlement site will not be a waste because it can be offered to landless farmers and poor people under the farmland reform policy.

The study team studied possible locations for a resettlement site which can function also as a refugee center in other states. As a result, it was concluded that Fort Magsaysay (3100 ha) in Nueva Ecija is promising. The committee led by the DAR is in charge of resettlement sites in states other than the three states. Fort Magsaysay has been taken up as the most promising candidate sites for the Mt. Pinatubo relief program for the following reasons.

- a) Legal preparations have already been completed.
- b) Since no traditional land ownership relation exists, no problem related to land ownership will arise.
- c) This area is the poorest financial situation in this state and region. Therefore, the area itself is positive to the construction of a resettlement site.

2-3 Possibility of Japan's Cooperation for Refugee Centers

2-3-1 Social Service Field

A considerable number of refugees still live at the refugee centers. The food ration to them has been discontinued. They are faced with hardships and worries for the future. However, the Philippine Government's basic policy for various reconstruction projects is to resettle sufferers. Refugee centers are regarded as temporary accommodation facilities. In view of the fact that public facilities like schools are temporarily used for some refugee centers, these refugee centers are not the basic policy of the relief program, but only an emergency measure. For the sufferers who are still living at refugee centers (most of them plan to immigrate to lowland resettlement sites), the largest problem is that they must stay at tentative accommodations for a long period without a future outlook. Therefore, their ultimate need is not the improvement of the state at refugee centers.

Disasters, such as mud flows, can occur during the rainy season during the subsequent years. Therefore, it will be necessary to continue to give aids in the form of food and health and medical service although the scale and the necessary quantities cannot be forecasted. In consideration of secondary disasters, the Philippine Government also decided to change some refugee center to permanent refugee places and already constructed basic facilities, such as simple houses, water supply and sanitary facilities.

In view of the above situation, Japan will be able to cooperate in the following ways.

- 1) Studying the safety of permanent refugee centers and supporting the construction of basic facilities
- 2) Emergency relief for sufferers of secondary disasters (food, medical and pharmaceutical supplies, health and medical care)

2-3-2 Livelihood Field

Six months have already passed since the outbreak of the disaster. However, it can be said that the disaster-stricken region is still in the disaster when we consider a Rahalu disaster anticipated during the rainy season after May, 1992. Both the refugees and those who fortunately have resumed the same living as before can become refugees again when the next Rahalu occurs. Since the next secondary disasters cannot be forecasted accurately, full-scale restoration projects, including measures for preventing secondary disasters, are difficult to start. In other words, it can be said that the region is in a "recess" of disasters. During the interview at a refugee center, the chairman of the Refugee Council which represents 23 refugee centers in Angeles City said, "What we refugees need most at present is not nice temporary houses. What we need is our own houses which we do not have to leave and jobs. We do not mind hardships. But it is hard to be in a temporary state without knowing how long it will last. This is difficult to bear."

The study team inspected various livelihood projects in the disaster-stricken areas. The largest reason for this is the absence of a basic hazard map (disaster forecast map). Since there is no basic line which can be shared available, people are unable to find where to start and what to start with. It seems that the people at refugee centers were aimlessly waiting for the next situation without knowing what they can expect and what they cannot expect. In other words, they must keep waiting without understanding their natural, social and economic situation. It can be said that this symbolizes the current state of the Mt. Pinatubo disaster relief programs.

Therefore, what should be done before anything is to make a hazard map. It should contain possibilities of using the land in all the related areas. Regional reconstruction plans should be formulated on the basis of such a hazard map. Since this disaster damaged the local industrial structure itself, symptomatic treatment without a basic policy will not be fruitful. Some of the refugees will be unable to recover what they have lost and become even more petty people.

1) Basic Study for Constructing Regional Refugee Center

Under the current situation, it is anticipated that the construction of resettlement sites will be delayed. The possibility that refugees will move smoothly from refugee centers is small. Therefore, it is highly probable that the refugee centers will exist for a long period. If the Task Force is dissolved before the completion of resettlement sites, there will be no office that centrally takes care of refugees. In view of these possibilities, refugees have a great need for a permanent regional refugee center which is managed by a local government and participated by the related ministries, agencies, NGOs and the representatives of refugees. Such a regional refugee center will play various important roles. For example, it will help refugees move, change jobs, change occupations and find employments. It will satisfy refugees' daily needs. It will become a communication center when a disaster occurs in the future.

In any event, it is essential to give aids to refugees who tend to be forgotten. The existence of a public center which continues to relay services to refugees will be necessary.

2-4 Possibility of Japan's Cooperation for Regional Redevelopment

2-4-1 Regional Development (Restoration and Reconstruction) Plan

The regional development plan (Regional Development Plan Update, 1990 - 1992) of Region III which was formulated before the disaster aimed to develop the industry mainly in Bataan, to promote agriculture and agro-industry and to raise regional enterprises (People's Industrial Enterprises : PIEs) in the related fields. It attempted to correct economic differences within the region and to ease the poverty.

The Presidential Task Force indicated the basic attitude to plan the restoration and reconstruction in compliance with the regional development plan. However, the Task Force's plan is limited to the resettlement program and the infrastructure reconstruction. The demarcation of the authority is quite clear. For example, the regional development plan is formulated by the RDC (Regional Development Council), the disaster prevention plan is left to

the RDCC (Regional Disaster Coordinating Council) and the U.S. Base conversion plan is left to the Base Conversion Authority. At present, no effort is being made to formulate a comprehensive regional reconstruction and development through mutual coordination among these organizations.

The U.S. Base conversion plan is highly important because it is the nucleus of the economic and social development of this region. No concrete plan has been made because the transfer of the authority to the Base Conversion Authority has not been approved at the Parliament. This issue must be settled in future. Concerning the site of the Clark Air Force Base, possibilities of mud flows during the rainy season are discussed. The problem of secondary disasters and the time when this site become usable must be studied in more details.

For formulating of a long term regional development plan, a physical framework plan (Physical Framework Plan : 1990 - 2020) which is based not only on a macro economic analysis, but also on regional characteristics, such as geographical conditions, natural environment and resource availability, has been introduced. (The Australian Government has granted computer equipment which will be used for producing distribution charts and composite maps from statistical data to the NEDA's Region III regional Office for the analysis of the physical framework.) It is necessary to study the environmental changes etc. which were brought about by the disaster and to review the regional development plan totally within this physical framework. Assistance to this operation will be important. However, it will take some time before such activities can be started. The possibility of Japan's cooperation in the field of farmland rehabilitation, agricultural infrastructure construction, regional infrastructure restoration and development should be studied after these plans are reviewed. In order to meet urgent needs in the immediate future, Japan should give aids to temporary items (such as temporary roads and bridges).

Assistance for improving and strengthening the regional disaster prevention system is essential because secondary disasters are predicted for several years though neither their scale, nor their range can be determined. It is said that nearly 20 of the more than 200 volcanoes in the Philippines are active volcanoes. Cooperation in this field will not only prevent secondary disasters of Mt. Pinatubo eruption, but also provide a disaster prevention model which can be applied in future. Japan will be able to provide both hardware assistance (development and construction of disaster prevention facilities) and software assistance (the operation of the National Disaster Coordination Council and other administrative organizations and regional and organizational training).

The following concrete projects can be conceived.

- 1) Dispatching experts for analyzing Mt. Pinatubo disaster, for forecasting and preventing secondary disasters
(Participation in the international cooperative project led by the U.S. Army battalion)
- 2) Dispatching experts for formulating a regional disaster prevention plan, conducting a development study on disaster prevention and forecast plan
- 3) Development study in specific sectors for correcting the regional development plan or a study for forming projects (Agriculture, forestry, mining industry, local industry etc.)
- 4) Study on Central Luzon region development (Master plan formulation)

2-4-2 Livelihood Field

It is essential to plan livelihood improvement measures for victims in coordination with the regional redevelopment plan discussed in the preceding section.

- 1) Comprehensive Study on Livelihood Improvement Programs
It is desired to fundamentally review and improve individual livelihood improvement programs which are being promoted by various organizations of the Livelihood Committee and NGOs as discussed in Chapter 1. These livelihood improvement programs will hardly succeed unless efforts to reconstruct the previous attempts and efforts are made. In other words, it has to be said that these programs and projects are not so promising. Most of the living improvement projects which are currently in progress in the Philippines are being applied to the entire disaster-stricken region. Therefore, this is a very good change to review them. A basic study on the evaluation of these livelihood improvement

projects will make a large contribution not only to the current, but also to the future projects of this nature. It can be a basic study for promoting the effective utilization of the DSWD's training center in San Fernand constructed with the JICA's cooperation as well as the NMYC's and LGUs' training centers. This study can be conducted by grant aid cooperation. It can be used as a basic study for vocational training facilities in other regions and national facilities. The results of such a study will be useful for the training centers which are planned in the resettlement sites as well. It will be significant for the JICA's Philippine local livelihood improvement project which was started in this fiscal year.

Livelihood improvement programs tend to be inclined heavily toward the training of skills and technologies. This is clear from the small number of samples which were obtained during the present study. It is true with many of the livelihood improvement projects in other countries as well. This is because those who give guidance do not have enough consideration or ability for marketing. As a result, such projects are often planned with little consideration for realistic market needs. If those who give guidance or the administrative organizations do not have adequate technology or experience for a livelihood improvement program, large accomplishment cannot be expected specially from production related projects.

After this basic study is completed, a pilot plan of a livelihood improvement program or project which complies with the regional redevelopment plan should be formed. Such a basic study can accomplish satisfactory results only if they are utilized for subsequent programs. It will attain a position as a strategic model.

For example, it is possible to plan vocational training for refugees in anticipation of future public works. If courses of operating large and small machines used for such works, basic training courses of construction works, training courses for operation planning and survey planning are given with the cooperation of local governments and NGOs, they will promote employment and help to improve the livelihood realistically.

Or else, if a training center functions as a center to receive orders and information about small household industry, it will be able to review the demand and the quality of training. Since it is highly possible that the livelihood improvement programs at resettlement sites and refugee centers will remain ineffective, various efforts must be made to increase the effectiveness of the administrative service which exists between the demand and the supply.

- 2) TLR Livelihood Improvement Project (Cooperative Society Type Business Promotion Plan)
The TLRC under the Livelihood Committee of the Task Force is currently promoting two livelihood improvement projects as mentioned in Chapter 1. It will be necessary to study the possibility of cooperation for these two projects. These projects are to be promoted under NGOs' leadership and differ from conventional projects in the scale. It will be necessary to participate in these projects from the initial stage because such a "participation type development" is anticipated in various parts of the world in the future and a similar concept may be applied to Karavason comprehensive regional development plan as well. It does not mean to cooperate with the projects immediately, but to trace the future model formation.

- 3) Comprehensive and Basic Study on Agriculture Rehabilitation

The destructive change of the natural conditions gave serious damage to agriculture, fishery and forestry. The people who are engaged in these industries are faced with new difficulties which they cannot solve with their previous experiences. It is important to develop new farming methods and crops for the damaged farmland and to promote the construction and improvement of the infrastructure for the livelihood of the entire region. The Aeta tribe's mountain agriculture and forestry must also be reconstructed. Irrigation facilities in many areas were decisively damaged by an ash fall and a Rahalu disaster. Rice production in paddy fields must be abandoned in many areas. The farmers' design of future life depends heavily on whether they can change to upland farming and fruit cultivation and whether they can get sufficient income to support families. There is an urgent need to give them an adequate advice as to whether they should give up their farmland or should continue farming. Since some farmers will be forced to make a fundamental change in the mode of living, including the desertion of agriculture or a native village, a comprehensive study must be made by a group comprising technology experts and management experts.

This study will require experts in many fields, including agriculture in ash fall farmland, livestock, vegetables, fruits, flower cultivation, forestry, fishery, fishery products processing, agricultural civil engineering (irrigation and other infrastructure facilities), farm management, marketing, farmer group management, agricultural products processing and farm operation. Before such a comprehensive study is started, it is essential to study experts of what fields must be dispatched in parallel with the production of hazard maps.

The JICA's team which is led by Mr. Tatsuji Takahashi of Soil Research and Development Center is engaged in experiments of crops suitable for ash fall land and soil improvement tests using powder coal and chemical fertilizers. For planning an effective comprehensive study and for forming subsequently projects, it will be helpful to concretely form Japan's cooperation on the basis of the studies which are already in progress in the Philippines. This is because it is not enough to combine individual symptomatic treatments that recover the disaster-stricken region to the previous state. It is important to plan comprehensive measures for creating a new economic and social system in this region.

This is specially true with Zambales which received the most serious damage and is anticipated to receive the most serious damage in the future as well. The problems of Zambales cannot be solved within the state. This is another reason why this study must be conducted with a comprehensive viewpoint based on regional characteristics and attributes.

At the same time, it is necessary to study where (regions and organizations) these experts should be sent in order to make large accomplishments. The DA plans to construct a demonstration farm in each state in order to study the form of agriculture that is possible in the natural environment produced by the disaster and can bring about enough income. This will be the right direction of actions. It is urgently necessary to study what is necessary for supporting such experiments and spreading activities, namely, what facilities are necessary for the agriculture in this region on the assumption of utilizing the existing research facilities. This is because agricultural experiment stations which meet regional needs will help farmers who will be unable to bear the expenses of making many trials and errors by themselves. They will implement more reliable agriculture for them.

Japan's possibility of cooperation in the livelihood field has been discussed. Effective and comprehensive coordination between the Philippines and donor countries, including Japan, is necessary for making these cooperation projects more effective. At least, it will be necessary to share a comprehensive design and linkage in each field from the stage of a preliminary study. For this purpose, it will be highly significant for Japan to propose and support a joint symposium on Mt. Pinatubo disaster relief projects in each field. It should be participated by experts of donor countries and Philippine experts (Government, local government, NGOs, research organizations etc.). Discussions among practical level experts, design level experts and administrative level experts will bring about various good results in many areas in the future.

2-4-3 Rural Infrastructure Field

The Philippine Government has formed various restoration programs for reconstructing the infrastructure of the rural areas. They are being executed either by the Government or by donors. There are many programs which are planned to be executed in future as well. The following three programs were selected among them from the viewpoint of Japan's possibility of cooperation. These programs had been studied within the NIA and the DA and revised slightly by this mission.

- 1) Restoration program for Mt. Pinatubo eruption affected irrigated districts
- Granting shallow wells, pumps and well excavating machines -
- 2) Restoration program for Mt. Pinatubo eruption affected farmland
- 3) Restoration program for Mt. Pinatubo eruption affected irrigated districts
- Collecting conduit irrigation development program -

2-4-4 Social Service Field

In the field of social services, there is a prospect in the restoration of facilities and equipment. The assistance which is necessary in the future is to normalize the supply of services. Restoration activities in the social service field require a relatively large number of people as studied in Chapter 1. Since financial restrictions exist, it is desirable to promote residents' participation after the emergency phase. For promoting residents' understanding and cooperation and providing social services through effectively functioning residents' organizations, it is necessary to collect statistical information about residents, to analyze their needs, to formulate a long term plan, including the assessment and improvement of the administrative service delivery structure and to support enlightenment and education. Japan's possibility of cooperation in these fields must be studied.

The study team proposes the following concrete projects.

- 1) Granting equipment and materials for improving information and statistics about residents in disaster-stricken region and dispatching experts
- 2) Dispatching experts and JOCV team for promoting the health care in the region and granting equipment and materials
(Health of mothers and children, IEC, training of regional health staff etc.)
- 3) Dispatching experts and JOCV team for non-formal education and vocational training
- 4) Dispatching advisers or development study for formulating a comprehensive restoration and development program in social service field

Chapter 3: Summary Table of Recommended Projects

1. Basic Study on Economic Reconstruction of the Disaster-Stricken Region

(1) Objective of Proposed Project

This project aims to conduct a basic study for reconstructing the regional industrial structure of the region which was affected by the Mt. Pinatubo eruption (West Central Luzon) and to formulate a master plan.

(2) Background (Problems which should be solved)

The sudden change of the regional industrial structure brought about the need to change the basic policy for economic and industrial promotion in the entire disaster-stricken region. However, the analyzation of the damage and comprehensively planning of a concrete process toward restoration and reconstruction are not sufficient, partly because of political factors. In view of the current state, the donors seem to be taking a wait-and-see attitude until the situation in the Philippines becomes more settled. However, a basic development policy for the future can be made only by quickly starting the above basic study.

(3) Targets (Expected accomplishments)

- 1) The extent of the damage given to each of the industries and each of the areas will be disclosed in details.
- 2) The current state of the industry and economy and their needs will become clear, and future development possibilities can be analyzed.
- 3) A regional economic reconstruction plan can be formulated.

(4) Activities

- 1) Study on damage to industries (by region, by industry)
- 2) Study on the current state of industry (including a study on employment capacity)
- 3) Formulating a regional economic reconstruction plan through a new industrial composition

(5) Beneficiaries : Regional enterprises, workers, residents and farmers in West Central Luzon

(6) Period of Project : 1992 ~ 1994 (2 years)

(7) JICA's Cooperation Plan

Form of cooperation : Development survey (Master plan)

Consulting : Statistical study, agriculture, commerce, industry, administration, etc.

(8) Philippine Counterpart

Organization in charge : NEDA

Area covered : West Central Luzon

(9) State of Request

In 1990, the Department of Trade and Industry (DTI) submitted a request for a JICA's Development Survey for formulating a master plan for the "West Central Luzon Development Program." Since JICA was working on a master plan for the "Comprehensive CARABA LUZON Development Program" at the year, it was planned to study this request on the basis of its accomplishments. The content of the request will have to be changed greatly because of the Mt. Pinatubo disaster. A comprehensive development program which covers not only industry, but also agriculture will be necessary. An unofficial request for the above development study in the form of a long list has already been submitted, as one of the listed projects to be studied in the 1992 fiscal year.

(10) Remarks

It is desirable to conduct this study as a preliminary study of the "West Central Luzon Development Program," to coordinate with the master plan being formulated by the USAID, to study the relation of the development of industry, agriculture and other industrial fields on the basis of the state of a secondary disaster caused by mud flows during the rainy season in the 1992 fiscal year, and to begin a full-scale study. It is possible to divide a full-scale study into agricultural development and other comprehensive social and economic development. If the proposed project (#20) is executed, these projects must be linked to the field of agriculture.

Secondary disaster must be scientifically forecasted and measures for preventing such disasters must be determined before the formulation of a master plan.

2 Formulation of a Regional Disaster Prevention Plan and Reinforcement of System

(1) Objective of Proposed Project

This project aims to formulate a regional disaster prevention plan which functions efficiently from its upper level right down to the residents level and to improve the disaster prevention system.

(2) Background (Problems which should be solved)

- 1) Knowledge of the concept of regional disaster prevention is not widespread.
- 2) The administrative structure for disaster prevention is not functioning sufficiently from its upper levels down to the terminal level.

(3) Targets (Expected accomplishments)

- 1) Strengthening the functions of the National Disaster Coordination Committee (NDCC) and Local Disaster Coordination Committees (LDCC/LODC), if possible.
- 2) Spreading the concept of regional disaster prevention among residents and establishing a disaster prevention system in which residents participate.

(4) Activities

- 1)-1 Assessment of current organizations from NDCC to BBB (BDCC) and their actual activities and functions.
- 1)-2 Guidance and advice on the local disaster prevention plan and administration.

(5) Beneficiaries : Members of disaster coordination committees at various levels (at least up to the state level) and regional residents.

(6) Period of Project : 1992 ~ 1996 (four years)

(7) JICA's Cooperation Plan

Form of cooperation : Mini-Project Type

Expert dispatching : Long-term, two experts (Field: Disaster prevention administration, disaster prevention education)

Trainee acceptance : Two persons/year

(8) Philippine Counterpart

Organization in charge: NDCC (LDCC/LDOC, RDCC, PDCC)

Areas covered : Region damaged by the Mt. Pinatubo eruption (Region III)

(9) State of Request

In the future, a discussion should be made with the organization in charge.

(10) Remarks

The Mt. Pinatubo disaster prevention plan as of May, 1991, must be analyzed sufficiently.

3 Basic Information Improvement Program for the Disaster-Stricken Region

(1) Objective of Proposed Project

This project aims to analyze accurate, basic information about victims and their needs in order that results can be used as the basis for formulating a reconstruction and development plan for the disaster-stricken region.

(2) Background (Problems which should be solved)

- 1) The master list (made by the DSWD) about the victims has not been analyzed sufficiently.
- 2) Victims' needs are not reflected in higher reconstruction plans.

(3) Targets (Expected accomplishments)

- 1) The victims' needs can be confirmed.
- 2) Residents' needs and opinions can be reflected in higher plans (reconstruction and development plans).

(4) Activities

- 1) Analyzing the information contained in the master list, studying the needs using the sample method.
- 2) Exchanging information with residents (explanation meetings, problem analysis seminars).
- 3) Analyzing the results of the study and writing a report.

(5) Beneficiaries : DSWD/ Region/ Provincial level staff

(6) Period of Project : 1992 ~ 1994 (Two years)

(7) JICA's Cooperation Plan

Form of cooperation : Expert dispatching

Expert dispatching : Long-term, two experts (Field : Information processing, social statistics)

Trainee acceptance : Two persons/ year

(8) Philippine Counterpart

Organization in charge : DSWD

Area covered : Region III

Necessary action : Offering chances to obtain sufficient information from field workers

(9) State of Request

Information system management is a part of the request made to the JOCV (emergency dispatching).

(10) Remarks

The DSWD explicitly stated a need for experts, but made a request to the JOCV because they have never made requests to any organization but the JOCV.

It will be effective to combine this project with the proposed project <#4> and to dispatch a team of miniprofessionals or experts.

If consultants who can make accomplishments for the short-term can be appointed, a development study (basic study) may be examined.

4 Social Service Restoration Program

(1) Objective of Proposed Project

This project aims to formulate a comprehensive social service development plan, including improvement of the service delivery structure.

- (2) Background (Problems which should be solved)
 - 1) In the social services field, a high priority is given to relief activities. Continuous and long-term social development activities are given a low priority.
 - 2) Since this field requires personnel assignments, a system reform (such as local code) will have a great effect on the activity system.
- (3) Targets (Expected accomplishments)
 - 1) Constructing a social services delivery structure which involves residents' participation.
 - 2) Formulating a comprehensive social services restoration and development plan
- (4) Activities
 - 1)-1 Assessment of social services delivery system
 - 1)-2 Needs analysis study
 - 2)-1 Advice to planning
- (5) Beneficiaries
- (6) Period of Project : 1992 - 1994 (Two years)
- (7) JICA's Cooperation Plan

Form of cooperation : Dispatching of an expert
 Dispatching of expert : Long-term, One expert (Field : Social development)
- (8) Philippine Counterpart

Organization in charge : RDC/DSWD
 Area covered : Region III
- (9) State of Request

In the future, a discussion should be made with the organization in charge.
- (10) Remarks

In determining the destination for dispatching of an expert, consideration should be given to the relationship between DSWD-Region III and RDC.
 If consultants who can make accomplishments within a short period of time can be appointed, the formulation of a master plan and a feasibility study based on a development study may be examined.

5 Non-formal Education and Vocational Training Program

- (1) Objective of Proposed Project

This project aims to formulate and introduce a non-formal educational and vocational training program which meets the potential and needs of the disaster-stricken region.
- (2) Background (Problems which should be solved)
 - 1) Adequate education and training opportunities are not being offered sufficiently to people, even though they are in need of a substitute means of making a livelihood in the disaster-stricken region.
 - 2) Many of the programs are planned originally by individual organizations. Since they overlap in content, the budgets and works also overlap. (This means a loss.)
- (3) Targets (Expected accomplishments)

Formulating an education and training program that meets regional needs.

- (4) Activities
 - 1) Studying the actual state of non-formal training and education being provided by various organizations, such as DOLE, DECS, NMYC and DSWD.
 - 2) Analyzing potential trainees' needs and interests as well as obstacles to receiving education and training.
 - 3) Correcting the current programs and introducing a new program.
- (5) Beneficiaries : Residents of the disaster-stricken region and resettlement sites.
- (6) Period of Project : 1992 ~ 1994 (two years)
- (7) JICA's Cooperation Plan

Form of cooperation : Dispatching of an expert
 Dispatching of an expert : Long-term, one expert (Field: Vocational training)
- (8) Philippine Counterpart

Organization in charge : DOLE/DECS/NMYC/DSWD
 Area covered : Region III
- (9) State of Request

Suggestions must be made to the organizations in charge.
- (10) Remarks

It is desired that there be adequate cooperation (study, information) with the "Local Livelihood Improvement Program" which is being carried out with the JICA's cooperation.

6 Resettlement Site Regional Health Care Promotion Program

- (1) Objective of Proposed Project

This project aims to improve awareness about health and medical care among residents of the highland settlement sites and to improve the state of health care in the region.
- (2) Background (Problems which should be solved)
 - 1) Many of the residents at the highland resettlement sites are not familiar with modern medical care (or, have a negative attitude due to misunderstandings).
 - 2) Nutrition disorders are found, particularly among children, and the health environment is extremely poor.
 - 3) The government does not provide sufficient health care services.
- (3) Targets (Expected accomplishments)
 - 1) Spreading health education among residents.
 - 2) Improving the residents' nutritional condition.
 - 3) Establishing a regional health care system (preventive, instructional) through the residents' voluntary activities.
- (4) Activities
 - 1-1) Developing and improving the health care curriculum in school education.
 - 1-2) Medical examinations by traveling doctors; guidance, consultation, campaigns, events.
 - 1-3) Organizing mothers' clubs, etc.; giving health care guidance and training to members.
 - 2-1) Studying and evaluating the state of supplementary meals provided.
 - 2-2) Giving nutritional guidance.
 - 3-1) Studying the state of health volunteers at the TBA.
 - 3-2) Raising and training health volunteers among the residents.
 - 3-3) Constructing a health volunteer organization at a health post in each resettlement site.

- (5) Beneficiaries : Immigrants of highland resettlement sites.
- (6) Period of Project : 1992 ~ 1998 (six years)
- (7) JICA's Cooperation Plan
Form of cooperation : Dispatching JOCV
JOCV dispatching : three members (Fields : Nutrition, public health, public nurse)
- (8) Philippine Counterpart
Organization in charge : DOH, DECS, DSWD
Areas covered : Highland resettlement sites (Unit : State)
Other actions required : It is necessary to have sufficient discussions with NGOs, and to coordinate with these organizations, which are already engaged in regional health care activities.
- (9) State of Request
A discussion should be made with the Philippine Government.
- (10) Remarks
The possibility of linkage with the family planning and female health care projects, which are planned in Tarlac, should be considered as well.

7 Comprehensive Study on Livelihood Improvement Projects

- (1) Objective of Proposed Project
This project aims to make the livelihood projects for victims effective.
- (2) Background (Problems which should be solved)
More than 100,000 refugees (including about 60,000 people belonging to the working population) are still accommodated at refugee centers and similar facilities. However, most of these people have no means of livelihood. The GO, the LGVA and NGOs are conducting a large variety of projects in order to improve this situation, but their results are poor. Relief projects are executed without sufficiently studying their effectiveness, their problems, the methods of solving problems, victims' needs and the realistic nature of their proposed means of making a living.
These victims have an urgent need to make a living. It is necessary to make a comprehensive study of victims' livelihood problems because this is the key to the future restoration and reconstruction of this region.
- (3) Targets (Expected accomplishments)
The success or failure of livelihood projects determines whether or not the restoration and reconstruction of this region will succeed. Using this premise, it becomes clear what assistance donors should give in order to make livelihood projects effective.
- (4) Activities
 - 1-1) Follow-up study of livelihood improvement projects
(relief works for the unemployed, production and sales projects, loan projects).
 - 1-2) Follow-up study of individual projects, such as pilot projects
(with emphasis on management and marketing).
 - 2) Formulating a reconstruction plan by field, based on the above adjustments.
 - 3) Formulating a reconstruction plan by region, based on the above adjustments.
- (5) Beneficiaries
Victims who have difficulty in making a living or must improve their means of making a living.

(6) Period of Project : 1992 ~ 1993 (Two years)

(7) JICA's Cooperation Plan

Form of cooperation : Dispatching of an expert team and a development study.

Dispatching of an expert : Long-term, one expert (Coordinator : two years)

Development study : Short-term : six experts (Fields : Social statistics, NGO, WID, commercial management, vocational training, agricultural production consultant, promotion expert, etc.).

(8) Philippine Counterpart

Organization in charge : TLRC, DSWD, LGUs, NGOs.

Areas covered : Areas where refugee centers and resettlement sites exist (mainly Pampanga, Tarlac, and Zambales)

(9) State of Request

Since the task force will be dissolved in the near future, the related ministries and agencies will revert to ordinary livelihood improvement operations. The TLRC will assume the role of a general coordinator instead of the OTI. As a result, the entire structure will weaken.

The DSWD has submitted to the JOCV a document for studying future activities.

(10) Remarks

A development study is an adequate form of cooperation. However, the dispatching of an expert team can be conceived because it is hard to obtain consultants in this field in Japan. One long-term expert should be the leader, or coordinator, and act as the chief of a Japanese-Pilipino joint-study team. About six short-term experts in the fields of management, marketing, etc. should be dispatched. Each expert will stay for three months. The dispatching of short-term experts should be continued for two years. Since the JOCV's emergency team plans to formulate a project for JOCV members, it is necessary to coordinate with them.

8 Livelihood Support Program for Highland Resettlement Sites

(1) Objective of Proposed Project

This project aims to transfer technology to residents of the highland resettlement sites and to implement a continuous and stable means of livelihood through technology transfer.

(2) Background (Problems which should be solved)

- 1) The residents do not have a sufficient understanding about the means of making a livelihood.
- 2) Since the current livelihood support programs are planned independently by individual organizations, they are not unified. The realistic nature and appropriateness of these programs are also questionable.
- 3) Residents are not given sufficient training to master skills.

(3) Targets (Expected accomplishments)

- 1) Selecting livelihood means that are suitable for residents' needs.
- 2) Improving residents' skills.
- 3) Securing livelihood means that enable future self-support.

(4) Activities

- 1) Assessment of current and planned livelihood programs (afforestation, vegetable cultivation, handicrafts, livestock, etc.) and study on residents' current skills and experiences.
- 2) Giving technology guidance on afforestation, vegetable cultivation (household vegetable gardens, etc.), poultry farming, handicrafts (bamboo work, woodwork) and dissemination of such guidance

- 3) Study on the future outlook and marketability of each livelihood means in this region and cooperation connected with related factors (access roads, warehouses, etc.) which are necessary for livelihood means.
- (5) Beneficiaries : Residents of highland resettlement sites
- (6) Period of Project : 1992 ~ 1996 (four years)
- (7) JICA's Cooperation Plan
Form of cooperation : JOCV dispatching
JOCV dispatching : Five members (Fields : Forestry (afforestation), livestock, poultry farming, vegetable cultivation (highland farms, household vegetable gardens), handicrafts, etc.)
- (8) Philippine Counterpart
Organization in charge : DSWD or state governments
Area covered : Highland resettlement sites (Unit : State)
- (9) State of Request
Discussions should be made with organizations like the DTI, the TLRC and the DSWD.
- (10) Remarks
If the site manager, who is appointed for each resettlement site by the Pinatubo Task Force continues to have the same assignment, it is necessary to cooperate with this individual.

9 Affected Farmers and Fishermen Livelihood Improvement Program

- (1) Objective of Proposed Project
This project aims to set up cooperative associations of local residents as the executors of the rehabilitation project. It also aims to plan and execute projects which are participated in by residents, to secure and improve the victims' livelihood and to promote regional reconstruction.
- (2) Background (Problems which should be solved)
The livelihood committee of the task force plans to leave future development to the LEAP of the TLR. It is a large project whose annual budget is 3.5 to 5.0 billion yen. However, the NGOs, farmer groups and fisherman groups which are to actually execute the program have little experience. This means a large risk for the implementation of the program. The infrastructure construction and improvement are technologically easy. However, the ability to market, manage and operate the project from the production stage (harvesting) to the sales stage cannot be acquired overnight. Since no experienced person is available in the field, and such an individual is crucial for the success of the project, basic advice and guidance, including some corrective guidance of the project, will be necessary.
- (3) Targets (Expected accomplishments)
Farmers and fishermen themselves will organize groups in order to operate their livelihood improvement projects. The TLRC's LEAP program can be functionally materialized. As a result, the farmers and fishermen who were affected by the Mt. Pinatubo disaster can obtain and improve their livelihoods and the region will be revitalized.
- (4) Activities
 - 1) Comprehensive beef cattle raising project
 - 2) Comprehensive rice production and processing project
 - 3) Comprehensive poultry farming project
 - 4) Deep-sea fishery project

- (5) **Beneficiaries**
Affected farmers, fishermen and residents of highland resettlement sites
- (6) **Period of Project** : 1992 ~ 1996 (four years)
- (7) **JICA's Cooperation Plan**
Form of cooperation : JOCV dispatching
JOCV dispatching : Livestock, rice, poultry farming, fishery, farmer organization etc.
Trainee acceptance : Four persons/year x four years (farmer organization)
- (8) **Philippine Counterpart**
Organization in charge : TLRC
Areas covered : Zambales, Pampanga, Tarlac
- (9) **State of Request**
The TLRC made plans for the projects listed in (4) within a short period and these projects are already in progress. However, the participation and organization of residents are not being promoted. It is desirable to make contact soon.
The DSWD has asked for the urgent dispatch of JOCV. (However, the request is mainly for a study.)
- (10) **Remarks**
It is desirable for JOCV to be engaged not only in the guidance of individual skills, but also in the comprehensive management and guidance of farmer and fisherman's organizations.

10 Mt. Pinatubo Mountain System Forest Restoration and Afforestation Program

- (1) **Objective of Proposed Project**
This project aims to transfer afforestation technology to the affected mountain tribe (Aeta tribe) so that they can be engaged in afforestation work in adjacent mountains as a part of their means of making a livelihood in the resettlement sites. It also aims to build the technology that is necessary for restoring and maintaining forests of the Mt. Pinatubo mountain system in the future.
- (2) **Background (Problems which should be solved)**
- (1) Disorderly deforestation has caused forest destruction and brought about various problems in Region III. For example, forest resources have decreased, the natural environment has become poor, the mountain tribe's living space has decreased and floods are increasing because of the decreased water-holding capacity of the soil.
 - (2) Forests which were destroyed by the ash fall and mud flows after Mt. Pinatubo's eruption must be restored.
 - (3) The mountain tribe must be provided with a means of livelihood in the mountains because it is difficult to find employment for them in the lowlands.
- (3) **Targets (Expected accomplishments)**
- 1) Setting the sapling rearing and afforestation technology at highland resettlement sites.
 - 2) Receiving afforestation orders from state governments and securing the affected mountain tribe's livelihood.
 - 3) Promoting forest restoration and afforestation in mountains near resettlement sites.
 - 4) Promoting forest restoration and afforestation forests in the Mt. Pinatubo mountain system.
- (4) **Activities**
- 1-1) Installing sapling rearing facilities at each resettlement site, and giving technology guidance, and providing guidance for establishing the sapling rearing business.
 - 1-2) Giving guidance on afforestation technology and guidance for establishing afforestation business to the resettled mountain tribe.

- 2-1) Promoting sapling rearing and afforestation business and giving guidance for establishing a business management system.
 - 3-1) Giving guidance to commissioned afforestation projects.
 - 4-1) Giving advice on forest restoration and afforestation promotion to the DNR and state governments, and formulating plans.
 - 4-2) Accumulating technology and giving guidance for establishing a management system so that the affected mountain tribe will be able to receive afforestation orders from the DNR and state governments and run the business on their own.
- (5) Beneficiaries
Affected mountain tribe (Aeta tribe)
 - (6) Period of Project : 1992 ~ 1998 (six years)
 - (7) JICA's Cooperation Plan
Form of cooperation : Individual dispatching of experts and JOCV project.
Total amount of cooperation : Approximately 50 million yen/year
Expert dispatching : Long term, one expert (Fields : DNR Region III, afforestation plan ;
First two years only)
Short-term two experts/year (Fields : Soil analysis, tree type selection, etc.)
JOCV dispatching : Four to five members (Fields : Afforestation, one member to each state)
Trainee acceptance : one person/year (DNR)
 - (8) Philippine Counterpart
Organization in charge : DNR, DSWD, state governments (or local governments)
Areas covered : Resettlement sites of mountain tribe (Tarlac, Pampanga, Bataan)
Local cost : 5,000,000 pesos (25,000 million yen)/year
Other action required : Making R/D signed by all the organizations in charge
 - (9) State of Request
Olongapo City and Tarlac are already conducting their own afforestation projects and are interested in this field.
 - (10) Remarks
It is necessary to ensure smooth cooperation between the DNR and local governments, such as state and municipal governments. It is a prerequisite that local governments commission afforestation projects for victims.
The JOCV members in the field of public nursing, livelihood improvement and community formation should be sent. It is desirable for them to take a comprehensive approach toward community (village) formation (regional development).

11 Water Supply Project for Resettlement Sites and Disaster-Stricken Communities

- (1) Objective of Proposed Project
This project aims to supply fresh water to resettlement sites and disaster-stricken communities by the use of deep wells.
- (2) Background (Problems which should be solved)
The ash fall and mud flows caused by the Mt. Pinatubo eruption forced nearby residents to move to the resettlement sites which were planned by the government. The resettlement sites can be classified into highlands (nine sites) and lowland (12 sites). The state of the lowland resettlement sites is still unknown because the program has just started. Highland resettlement sites have wells. However, each site has only two wells, which do not meet the need of the residents. Even drinking water is not sufficiently available. The state of the water supply is poor in many other communities as well because their water sources were damaged.

(3) Targets (Expected accomplishments)

About 600 deep wells will be excavated at highland resettlement sites, disaster-stricken communities and lowland resettlement sites, if necessary, during the next two years. The priority will be determined by the urgency of the need for fresh water. Not only drinking water, but also the necessary fresh water will be supplied to residents both in quantity and quality. This will help to maintain life, avoid diseases attributable to contaminated water, and decrease the labor of drawing water by women and children.

(4) Activities

(1st year)

This project must be carried out urgently. First, well excavation machines, other machines and materials will be brought from Japan and about 200 wells will be excavated, mainly in the highland resettlement sites. At the same time, preparations will be made to supply the following machines:

- 1) Truck-mounted well excavation machines (Capacity 200m) -- 5 sets
- 2) Trucks, water lorries, pick-ups, etc. -- 5 sets
- 3) Hand pumps, pipes, screens, etc. -- For 400 wells

(2nd year)

The above machines and materials will be granted. The DPWH of the Philippines will excavate about 400 wells and install pumps in disaster-stricken communities using these machines and materials.

(5) Beneficiaries

Sufferers in resettlement sites in the states of Bataan, Pampanga, Tarlac and Zambales.

(6) Period of Project : 1992 ~ 1993 (two years)

(7) JICA's Cooperation Plan

Form of cooperation : General grant aid cooperation

Total amount of cooperation : 2 billion yen

(8) Philippine Counterpart

Organization in charge : Department of Public Work (DPWH)

Areas covered : Bataan, Pampanga, Tarlac and Zambales.

(9) State of Request

The DPWH has submitted a request to the NEDA. (Its contents differs slightly from this table.)

(10) Remarks

This project has high urgency.

12 Disaster-Stricken Farmland Restoration Project

(1) Objective of Proposed Project

This project aims to restore the farmland which was damaged by the ash fall. Volcanic ash will be removed and the soil will be improved by deep plowing.

(2) Background (Problems which should be solved)

Paddy fields of about 35,800 ha and upland fields of about 27,300 ha were damaged by a 5 to 15cm deep ash fall due to the Mt. Pinatubo eruption. The ash fall lowered the physical and chemical properties of the soil. In order to restore the damaged farmland, volcanic ash must be removed and the soil must be improved by deep plowing, etc. It is also necessary to study concrete methods, such as deep plowing, and to monitor the effects obtained from deep plowing.

(3) Targets (Expected accomplishments)

An adequate soil improvement technology will be developed by experimenting with ash removal methods, deep plowing methods (such as inversion and agitation) and organic substance quantities, etc.

Machines which are necessary for deep plowing will be rented to farmers in order to improve the soil of the disaster-stricken farmland and to raise the productivity of the land.

(4) Activities

A center will be constructed in the DA's regional office. The center will consist of an office, a laboratory, an experimental field and a training room. A service station will be constructed in the four disaster-stricken states. A service station will have an office, a repair factory, tractors, bulldozers, graters, backhoes etc. Concrete deep plowing methods will be tested and effects will be monitored at the center.

At the service station, soil improvement technology, including deep plowing, will be taught to farmers, and tractors and other machines which are necessary for such instruction will be rented.

(5) Beneficiaries

Farmers in four states who suffered ash fall damage.

(6) Period of Project :

Facility construction 1992 ~ 1993 (two years)

Miniprofessional : 1993 ~ 1996 (three years)

(7) JICA's Cooperation Plan

Form of cooperation : General grant aid cooperation

Total amount of cooperation : 1.5 billion yen

Dispatching of experts : Long-term, two experts (Fields : Soil, crop cultivation)
(Miniprofessional) Short-term, one person (Field : Agricultural machines)/year

(8) Philippine Counterpart

Organization in charge : Department of Agriculture (DA)

Areas covered : Bataan, Pampanga, Tarlac and Zambales

(9) State of Request

It is being considered by the DA.

(10) Remarks

The improvement of ash laden soil is being studied under the "Soil Research and Development Center Program" (July 1, 1989 ~ June 30, 1994) and some accomplishments have been made. Since research will increase the burden of this project excessively, the scope of this project should be limited to the testing of the accomplishments of the "Soil Research and Development Center", the transfer of the technology to farmers and the monitoring of the effects. Clear demarkation and cooperation with the Center will be necessary.

**13 Disaster-Stricken Irrigated District Restoration
(Small Water Source Development) Project**

(1) Objective of Proposed Project

This project aims to supply irrigation water to disaster-stricken farmland by developing small-scale water sources (shallow wells) for irrigation.

(2) Background (Problems which should be solved)

Nationally operated irrigated districts and communal irrigated districts in Bataan, Pampanga, Tarlac and Zambales were damaged by ash falls and mud flows. As a result, it became impossible to get water from rivers and field heights rose as a result. Since it is

predicted that mud flows will last for several more years, it will be difficult to get water from rivers for some time. It has been found that a large amount of underground water exists in this region. It is considered necessary to develop water sources (shallow wells) for the disaster-stricken farmland.

(3) Targets (Expected accomplishments)

Irrigation water will be supplied to farmland on a stable basis (one to three ha per lot) from wells instead of rivers. The agricultural production will be stabilized by supplementary irrigation during the rainy season and total irrigation during the dry season. Farmland of about 4,000 ha will benefit from this project. It will contribute to farmers' self-sufficiency and income increases.

(4) Activities

The following machines and equipment will be granted for constructing 2,000 shallow wells in the disaster-stricken irrigated farmland.

(Machines and equipment)

- 1) Truck-mounted well excavation machines (Average excavation depth : 30m) -- 15 sets
- 2) Centrifugal pumps (Aperture 50mm) -- 500 units
(Aperture 75mm) -- 1,500 units
- 3) Engines for pumps -- 2,000 units

(5) Beneficiaries

Farmers in five nationally-operated irrigation districts and 163 communal irrigation districts

(6) Period of Project : 1992 (one year)

(7) JICA's Cooperation Plan

Form of cooperation : General grant aid cooperation
Total amount of cooperation : 1.5 billion yen

(8) Philippine Counterpart

Organization in charge : National Irrigation Agency (NIA)
Areas covered : Bataan, Pampanga, Zambales and Tarlac

(9) State of Request

The NEDA has submitted a proposal of nearly the same content to the Japanese Embassy.

(10) Remarks

Japan will grant machines and equipment, while the NIA will perform the well excavation work.

14 Disaster-Stricken Irrigation District Restoration (Collecting Conduits) Project

(1) Objective of Proposed Project

This project aims to supply irrigation waters to the disaster-stricken farmland by constructing collecting conduits.

(2) Background (Problems which should be solved)

Some irrigation districts were not seriously damaged by direct ash fall, but it has become difficult to get water from rivers due to mud flows. Their problem is how to obtain irrigation water.

(3) Targets (Expected accomplishments)

This project is planned for the rivers which have already been damaged by mud flows and in which there is the possibility of a secondary disaster. Therefore, water collection conduit

facilities will be constructed along the rivers far from the center of the stream, instead of constructing structures directly in rivers. In this way, damage to the facilities by a secondary disaster can be avoided.

Since the irrigation area of one facility is about 30 ha, stable irrigation water will be supplied to 3,000 ha of land in total.

(4) Activities

A water collection conduit made of polyvinyl or steel perforated pipe (diameter : 60cm) will be buried at one to two meters under the river bed of a river which was not seriously damaged by mud flows. A conduit may be vertical or parallel to a river, but it must be buried at a sufficiently large distance from the center of the stream. A conduit of about 100 meters in length is regarded as one set, and water collected by these conduits will be led to a farm pond on the river bank. Water will be led to farmland by an open channel, natural flow, or a pump.

This kind of facility will be constructed at 100 locations.

(5) Beneficiaries

Farmers in the four states which were damaged by mud flows

(6) Period of Project : 1993 ~ 1994 (two years)

(7) JICA's Cooperation Plan

Form of cooperation : General grant aid cooperation

Total amount of cooperation : 1.5 billion yen

(8) Philippine Counterpart

Organization in charge : National Irrigation Agency (NIA)

Areas covered : Bataan, Pampanga, Zambales and Tarlac

(9) State of Request

It is being studied by the NIA.

(10) Remarks

The areas covered by this project have possibilities of secondary disasters (mud flow) during the rainy season in 1992 and subsequent years. A concrete study of this project should be started after the hazard map, which is being made with the USAID's cooperation, and a redevelopment master plan are completed, and after the state of the mud flows during the rainy season of 1992 (at least) is studied. Although a need exists, this project should be studied as a pending issue because the secondary disasters cannot be forecast.

15 Nationally Operated Settlement Site Program

(1) Objective of Proposed Project

This project aims to accept the people affected by the Mt. Pinatubo eruption, who reside in the Philippine Government's nationally operated settlement sites. It aims to promote and revitalize the project, aid the self-supporting efforts of farm households, stabilize farm management and improve farmers' living standards.

(2) Background (Problems which should be solved)

Since around 1950, the Department of Agricultural Reform has provided national land as settlement sites for farmers in order to solve the problem of landless farmers. This nationally operated settlement site project has not been effective for various reasons. The Major obstacle to success is that the government simply distributes fields to farmers who have no experience in farm management and provides no aid for farmland development. The Pag-Asa district (Tarlac), which was damaged by the Mt. Pinatubo eruption, will be selected as a model district. The problems of this district will be examined by a development study and an eruption damaged land restoration plan as well as a project revitalization plan will be formulated.

(3) Targets (Expected accomplishments)

The project will restore the land which was damaged by the Mt. Pinatubo eruption and enable residents to start self-supporting management by a project revitalization plan. People affected by the Mt. Pinatubo eruption will be accepted where enough space is available. The revitalization plan will be the model for similar projects to be carried out at 47 locations in the country. When the study is completed, professional technology cooperation will be offered for the operation of the project.

(4) Activities

1st phase : A development plan will be formulated for the district which was selected as the model.

2nd phase : The model complex will be developed by a cooperative grant.

3rd phase : Farm management guidance will be given through professional technology cooperation. Development guidance will be given to other regions. The materials and machines which are necessary for the development will be granted. (Loans will be considered in some cases.)

(5) Beneficiaries : Residents of the farmland reform project of Tarlac State and people affected by the eruption of Mt. Pinatubo.

(6) Period of Project :

Development study : 1992 ~ 1993 (two years)

Grant aid fund cooperation : 1993 ~ 1994 (one year)

Professional technology cooperation : 1994 ~ 1999 (five years)

(7) JICA's Cooperation Plan

Form of cooperation : Development study (master plan, feasibility study), grant aid fund cooperation, professional technology cooperation

Schedule : Dispatching of experts : Long-term, six experts (Fields : Agriculture development, farmland development, farm management, agricultural machinery, farmer organization, etc.)

Short-term, three experts/year

Trainee acceptance : three persons/year

Grant of machines and materials : 300 million yen

(8) Philippine Counterpart

Organization in charge : Department of Agricultural Reform

Area covered : Tarlac

(9) State of Request

This project is being studied within the DAR.

16 Comprehensive Development Program for the Farm Area in the Eastern Part of the State of Nueva Ecija

(1) Objective of Proposed Project

This project aims to formulate a development plan for the land which was transferred to the department of Agricultural Reform from a governmental organization, in order to obtain settlement site for the Mt. Pinatubo eruption victims and to promote agricultural reform.

(2) Background (Problems which should be solved)

Land of about 7,000 ha in the hill area (Palayan city) in Eastern Nueva Ecija was transferred from individuals and the department of national defense to the department of agricultural reform, in order to promote agricultural reform. Some of the victims of the Mt. Pinatubo eruption have come to this place. It is necessary to secure a new settlement place for them and establish a livelihood plan for the people who have lost their land.

(3) Targets (Expected accomplishments)

A comprehensive farm village development and settlement plan will be formulated so that residents (beneficiaries of the agricultural reform and people affected by the Mt. Pinatubo eruption) can settle in the settlement site in Palayan City and make a living in the future.

(4) Activities

- ① Formulating an agricultural infrastructure plan (ground water, irrigation, water source development, farmland development) plan.
- ② Formulating an agricultural production and farm management plan
- ③ Formulating an agro-industrial development plan
- ④ Formulating a farm village regional development plan
- ⑤ Formulating a farm village residential district plan
- ⑥ Formulating a farmer organization development plan
- ⑦ Making aerial survey maps (scale: 1/5,000)

(5) Beneficiaries

Refugees (Farmers or those who desire to settle in agricultural areas)

(6) Period of Project : 1993 ~ 1994 (two years)

(7) JICA's Cooperation Plan

Form of cooperation : Dispatching of experts (feasibility study).

(8) Philippine Counterpart

Organization in charge : Department of Agricultural Reform, Department of Natural Environment Resources

Area covered: Palayan City in Nueva Ecija State

(9) State of Request

The project is under study at the DNA.

(10) Remarks

The Department of Agricultural Reform is not in charge of the Mt. Pinatubo victims in this region according to the Philippine Government's administrative distribution. Therefore, coordination with the Philippine Government is necessary.

17. Preparatory Program for Farmland Covered with Volcanic Ash

(1) Objective of Proposed Project

Farmland over a large area has been damaged by ash which was washed down by rain and flooding after the volcanic eruption. This project aims to confirm the ownership of this farmland. It also aims to construct the infrastructure and a farm management demonstration base.

(2) Background (Problems which should be solved)

Ash, which fell around Mt. Pinatubo, was washed down by floods during the rainy season and completely buried excellent farmland. A large area is buried by 1m to 4m of ash and who the landowners are cannot be confirmed. Since it is impossible to remove the ash, agriculture which can be utilized under these conditions must be planned. Fortunately, 1/4,000 ~ 1/5,000 scale maps of the areas around the heavily flooded rivers have been made under the JICA's irrigation development study and farmland information improvement program. It is necessary to confirm landownership on the basis of these maps and to organize the partitions and construct the agricultural infrastructure. Since agriculture must be resumed under special conditions, a demonstration field must be constructed to give guidance on farm management.

(3) Targets (Expected accomplishments)

The scattering of the victims can be prevented by restoring the previous state of land ownership, easing farmers' anxieties and giving hope to continued farm management by demonstrating cultivation at a demonstration field. The reestablishment of conventional paddy field farming cannot be expected during the immediate future, but it will be demonstrated that farming can be continued by converting to upland farming by utilizing the merits of being close to a large city.

After partitions are unified, new land registration will be started.

(4) Activities

- ① Confirming landownership in areas where maps are currently available and making drawings
- ② Farmland improvement should start concurrently with river restoration in two to three years, when the flow of volcanic ash is expected to stop.
- ③ Since no running water can be expected near this region, upland farming, using small-scale groundwater sources, will be started.
- ④ Wells and a demonstration farm will be constructed with grant aid funds.

(5) Beneficiaries

Affected farmers of Mt. Pinatubo in Pampanga and Tarlac States

(6) Period of Project :

Development study : 1993 ~ 1994 (two years)

Grant aid fund cooperation: 1995 (one year)

Miniprofessional : 1995 : 1998 (three years)

(7) JICA's Cooperation Plan

Form of cooperation : Development study (feasibility study), grant aid fund, miniprofessional

Schedule : Dispatching of experts : Long-term, three experts (Fields : Agriculture development, farm management guidance, etc.)

Short-term, two experts/year

Trainee acceptance : two persons/year

Grant of machines and materials : 30 million yen

Grant aid fund cooperation : 1.5 billion yen

(8) Philippine Counterpart

Organization in charge : Department of Farmland Reform and other related organizations

Areas covered : Areas damaged by floods and whose aerial maps are available in Pampanga and Tarlac States.

Other action required : The Philippine counterpart's action is important because the confirmation of landownership involving personal interest accounts for a large part of the work.

(9) State of Request

This project is being studied in the DNR.

(10) Remarks

The Philippines should start the confirmation of previous landownership quickly. The following projects are related to the maps which are necessary for this project.

- ① Gumain River Irrigation Program : JICA-NIA
- ② Southern Tarlac Irrigation Maintenance and Reinforcement Program : JICA-NIA
- ③ Farmland Information Improvement Program : JICA-DAR
- ④ Pampanga River Irrigation Program : JICA-NIA

18 Zambales State Agriculture Restoration and Promotion Program

(1) Objective of Proposed Project

This project aims to make a comprehensive study of the damage to agriculture in Zambales State and to formulate a restoration and promotion plan.

(2) Background (Problems which should be solved)

Agriculture is the main industry in Zambales. The state sustained considerable damage due to ash falls and mud flows. It is estimated that 10,000 to 20,000 ha of farmland became untillable due to heavy ash falls (more than 30cm) and mud flows. Even farmland with less ash fall has not been restored by means of ash removal or deep plowing because of the shortage of funds or technological guidance. About 10,000 farmers have lost their land and homes, and they are still living as refugees. It is estimated that about 30,000 farmers do not face to take refugee but face hardship because they have no prospect of making a living by agriculture or because agricultural production has decreased. The middle part of the state has no possibility of a secondary disaster, but a comprehensive agriculture restoration program must be made because there are worries over increasing poverty.

(3) Targets (Expected accomplishments)

- 1) The state of the damage to agriculture in Zambales will become clear. The current state and the needs of farmers will also become clear.
- 2) A farmland restoration plan will be formulated based on the result of the study and measures and projects for soil improvement will be proposed.
- 3) An agricultural system (crops, cultivation technology, management etc.) reconstruction program based on the state of the damage (possibility of soil improvement) will be proposed.
- 4) An agriculture restoration and promotion project will be executed on the basis of the proposed program and the livelihood of the victims will be improved.

(4) Activities

- 1-1) Study and analysis of damage to agriculture.
- 1-2) Study and analysis of affected farmers' current state and needs.
- 2-1) Formulating a farmland soil improvement plan.
- 3-2) Preparing a proposal for an agriculture system for reutilizing ash-buried farmland.
- 3-3) Preparing a proposal for reutilizing mud flow land.

(5) Beneficiaries

Affected farmers in Zambales

(6) Period of Project : 1992 ~ 1993 (two years)

(7) JICA's Cooperation Plan

Form of cooperation : Development study (master plan, feasibility study)

(8) Philippine Counterpart

Organization in charge : DA, DAR, NIA
Area covered: Zambales

(9) State of Request

Discussions should be made with the DA, the DAR and the NIA.

(10) Remarks

It is desirable to follow-up the results of the study by supplying the necessary machines and materials, giving grant aid funds and dispatching experts or JOCV members for technology guidance.

The proposed projects <11>, <12>, <13> and <14> list what is clearly necessary at present. This project may precede them.

Soil improvement of ash-buried land is being studied under the "Philippine Soil Research and Development Center Plan" (by professional technology cooperation). Its accomplishments can be used for this project.

Programs ; areport sbmitted by the JICA contact mission