

*The Study on Comprehensive Disaster Prevention
around Mayon Volcano*

SUPPORTING REPORT (2)

(Part II : Feasibility Study)

XIX : Evacuation

**SUPPORTING REPORT (2) - XIX
EVACUATION**

Table of Contents

	<u>Page</u>
1. EVACUATION SYSTEM STRENGTHENING.....	XIX - 1
1.1 Present Condition and Problems	XIX - 1
1.2 Proposed Evacuation Plan.....	XIX - 16
1.3 Facility Planning	XIX - 19
1.4 Disaster Awareness Promotion.....	XIX - 24

List of Tables

	<u>Page</u>
Table XIX 1.1	Profile of Existing Evacuation Centers - Bacacay..... XIX - 26
Table XIX 1.2	Profile of Existing Evacuation Centers - Camalig XIX - 27
Table XIX 1.3	Profile of Existing Evacuation Centers - Daraga XIX - 28
Table XIX 1.4	Profile of Existing Evacuation Centers - Guinobatan XIX - 29
Table XIX 1.5	Profile of Existing Evacuation Centers - Ligao..... XIX - 30
Table XIX 1.6	Profile of Existing Evacuation Centers - Malilipot XIX - 31
Table XIX 1.7	Profile of Existing Evacuation Centers - Malinao..... XIX - 32
Table XIX 1.8	Profile of Existing Evacuation Centers - Sto. Domingo..... XIX - 33
Table XIX 1.9	Profile of Existing Evacuation Centers - Tabaco..... XIX - 34
Table XIX 1.10	Profile of Existing Evacuation Centers - Legazpi City XIX - 35
Table XIX 1.11	Proposed Schedule of Construction of the Evacuation Centers ... XIX - 36
Table XIX 1.12	Allocation of Additional Evacuation Unit/School During Priority Project Implementation Stage..... XIX - 37

List of Figures

	<u>Page</u>
Figure XIX 1.1	Evacuation Flowchart..... XIX - 39
Figure XIX 1.2	Organizational Structure : Evacuation..... XIX - 40
Figure XIX 1.3	Location of Evacuation Centers in the Study Area XIX - 41
Figure XIX 1.4	Transportation Mechanism XIX - 42
Figure XIX 1.5	Location Map of Planned Evacuation Centers XIX - 43
Figure XIX 1.6	Plan for Evacuation Center..... XIX - 44
Figure XIX 1.7	Evacuation Center XIX - 45
Figure XIX 1.8	Plan for Emergency Shelter..... XIX - 46
Figure XIX 1.9	Livestock Sanctuary XIX - 47

SUPPORTING REPORT (2) – XIX EVACUATION

1. EVACUATION SYSTEM STRENGTHENING

The Interim Report provided the general information on the evacuation system being implemented in the Study Area; to include the following: regulatory background of evacuation, institutional set-up, evacuation procedures, standard criteria in identifying the present evacuation sites as well as the problems concerning the evacuation system. This report also identified the recommended measures to improve the present evacuation system such as the (a) improvement of the existing evacuation centers; (b) the construction of the emergency shelters to protect those residents who may not have the time to go to the evacuation centers in times of hazards ; and (c) provision of the livestock sanctuaries to protect the animals of the evacuees.

On the other hand, this report focuses more on the details of the proposed evacuation plan, to include the following:

- a) construction of additional 775 units (37,200m²) in the identified 56 schools in the Study Area. The construction of these units will be undertaken in the priority project implementation phase. The remaining balance of 2,325 units to be constructed on a staggered basis at the later stage.
- b) construction of 1,314 toilet facilities and 857 shower facilities and installation of 929 faucets. The proposed layout designs for these facilities are included in this report.
- c) construction of 16 emergency shelters with the proposed layout design;
- d) construction of 9 livestock sanctuaries with the proposed layout design;
- e) the suggested training programs for the barangay/BDCC officials, community residents and evacuation center staff.

1.1 Present Condition and Problems

(1) Evacuation System

1) Procedures

The most common hazards that are experienced by the residents of the Study Area are: the Mayon Volcano eruption, typhoon and flood, and mud and debris flow. As a precautionary measure to prevent loss of lives, evacuation is usually undertaken. The evacuation procedures are basically comprised of the following main activities: issuance of warning to evacuate, movement of residents to the

evacuation center, arrival and stay at the evacuation center and return to their homes when the danger is over.

a. Issuance of warning - for each type of hazard, there is a responsible agency that issue the warning such as the PAGASA for the typhoon and flood .PHIVOLCS for the volcanic eruption and OCD for the mud and debris flow. The warning is issued to the PDMO and the concerned City and Municipal Disaster Coordinating Councils (C/MDCCs). The concerned C/MDCC issue the notice to evacuate to the BDCC so that the residents will be duly informed. The broadcast media assists in informing the residents particularly those from the barangays without any communication facilities (i.e. telephone, cellular phones, VHF radios). Evacuation of residents of affected areas must be undertaken with the following warning levels:

- Alert Level 3 for volcano eruption
- Warning Level 3 for typhoon
- Warning Level 3 for mud and debris flow

At this time, each member of the P/C/MDCC is undertaking the following preparatory activities related to evacuation; namely: preparation of the evacuation center, organization of the evacuation center staff, setting up of the reception area, preparation of the relief goods, medicines and other supplies, preparation of vehicles.

The BDCC officials usually inform the residents of the notice to evacuate by the ringing of the school and chapel bells and conducting house to house visits.

b. Movement from Barangay to the Evacuation Center

The concerned C/MDCC dispatch the vehicles to help in transporting the residents to the designated evacuation centers. There are usually identified pick-up points in the barangay where the residents gather to wait for the vehicles. The children, women, elderly persons and persons with disabilities are the priority sectors to be transported first to the evacuation centers. The residents are usually escorted by the BDCC members. In some cases, due to the limited number of available transportation from the C/MDCCs, the barangay officials hire vehicles (jeepneys, tricycles) to bring the residents to the evacuation centers. Otherwise, the residents go on their own.

c. Arrival and Stay at the Evacuation Center

Upon arrival, the household heads are advised to register at the reception area and to get their room assignment. This will be followed by the orientation on the procedures to be observed at the evacuation center. The orientation is usually conducted by the Evacuation Center Head. The evacuees are also organized into groups to assist in the distribution of relief goods, cooking and serving of food, washing the dishes and cleaning the center premises. Medical services are also provided to the evacuees. Stress Debriefing and Psychosocial Care to evacuees suffering from trauma is also being provided by Social Workers, if needed.

d. Return

The PHIVOLCS/PAGASA/OCD (depending on the hazard) will inform the P/C/MDCCs that the situation is back to normal and the evacuees can return home. The same information will be relayed by the C/MDCCs to the BDCCs so that the latter, in turn, can notify the evacuees of this development.

In the case of the eruption of Mayon volcano, vehicles are usually arranged by the C/MDCCs to transport the residents to their barangays. The same procedure is followed in their return home, that is the children, women, elderly and the disabled persons are given the priority to be transported first, duly escorted by the barangay officials. The unloading of the passengers will be at the designated drop-off points.

In the case of typhoon, flood, mud and debris flow, the residents usually go home on their own once the warning level has been lowered and the information that they can return to their barangays is relayed. Since the evacuation centers are located near their residences, the provision of transportation facilities is not always necessary.

Figure XIX 1.1 presents the evacuation flowchart.

2) Organization and staffing

Since evacuation is one of the critical activities during disasters, the government line agencies and their functions on this matter have been defined in the Calamities and Disaster Plan formulated by the National Disaster Coordinating Council in 1988. In addition, this Plan also provided for the creation of the Committee on Evacuation at the regional, provincial, city/municipal and barangay levels.

On the other hand, the DSWD Guidelines in the Management of Evacuation Centers. During Disasters defined the composition of the Evacuation Center Staff (Head, Assistants and Volunteers) who are tasked to manage the day-to-day operations of the Center. In addition, the participation of the community in the management of the evacuation center is also defined in the said guideline.

a. Government Line Organizations

The major objective of the evacuation service is to evacuate the populace and properties systematically in case an emergency arises. Hence, the Calamities and Disaster Preparedness Plan formulated by the NDCC (1988) defined the key line organizations that will be involved in evacuation activities as follows:

Line Organizations	Activities
DOST	
PAGASA	- issues warning on typhoons and floods
PHIVOLCS	- issues advisories on earthquakes, volcanic activities
DND	
OCD	- develops and prepares programs for disaster preparedness
PNP	- provides security in the evacuation centers
AFP	- provides transportation facilities and security services
DECS	- makes available suitable school buildings as evacuation centers
DPWH	- provides transportation and communication facilities, protects and repairs damaged structures (roads, dams, evacuation centers, etc.)
DOH	- provides medical staff and services
DSWD	- provides relief, counseling services and training
DOTC	- provides emergency transport services
NHA	- provides emergency or temporary housing facilities
PLA	- assists in disseminating warning

b. LGUs

As previously stated, the 1988 NDCC Calamities and Disaster Preparedness Plan provided the details for the organization of the committee on evacuation at the regional, provincial, city/municipal and barangay levels to include the organizational set-up and the tasks of the members of the Committee. Hence, a Committee on Evacuation is an integral part of the organizational structure of the P/C/M/BDCCs (Figure XIX 1.2)

c. PDCC

The PDCC Committee of Evacuation is composed of the following: the Department of Education, Culture and Sports (DECS) as its Chairman while the members are the following agencies: Provincial Health Office (PHO), Provincial Social Welfare and Development Office (PS WDO), the Provincial Disaster Management Office (PDMO), the Philippine Information Agency (PIA), the Provincial Engineering Office (PEO) the Department of Public Works and Highways (DPWH), the Department of Transportation and Communication (DOTC) and the Philippine National Police (PNP).

The tasks of the members of the Evacuation Committee are as follows:

Phase	PDCC Evacuation Committee Members							
	PHO	DECS	PSWDO	PDMO	PIA	PEO and DPWH	DOTC	PNP
		-over-all coordinator in the execution of the evacuation plan						
Pre-evacuation	<ul style="list-style-type: none"> - organizes mobile disaster teams with emergency medicines - designates hospitals, health centers & clinics -prepares medicines & medical supplies 	<ul style="list-style-type: none"> -reviews inventory of evacuation centers -coordinates with DPWH/PEO & DOH/PHO in the provision of mess and sanitation facilities in evacuation centers 	<ul style="list-style-type: none"> -prepares relief items in strategic areas for use in evacuation centers 	<ul style="list-style-type: none"> -issues emergency evacuation advisories to C/MDCCs 	<ul style="list-style-type: none"> -conducts information campaign on disaster preparedness 	<ul style="list-style-type: none"> -inspects facilities & building structures at the evacuation centers -submits report pertaining to Emergency Transportation Plan 	<ul style="list-style-type: none"> -advises private bus/jeep operators to prepare vehicles -identifies number of needed and available vehicles 	<ul style="list-style-type: none"> -prepares manpower and vehicles to areas where critically needed -make available communication facilities
Evacuation	<ul style="list-style-type: none"> -establishes emergency clinics at the evacuation centers -maintains sanitary conditions -conducts immunization -conducts information drives to maintain 	<ul style="list-style-type: none"> -makes available safe school buildings as emergency evacuation center -contributes available food commodities -assigns personnel to manage the evacuation centers -maintains 	<ul style="list-style-type: none"> -conducts emergency relief services -supervises community kitchen management -conducts Critical Stress Debriefing to evacuees -identifies 	<ul style="list-style-type: none"> -provides needed support (vehicles, medicines, relief goods, etc) to concerned C/MDCCs 	<ul style="list-style-type: none"> -issues press releases regarding evacuation 	<ul style="list-style-type: none"> -provides vehicles and clearing equipment -provides regular updates on the status of roads, dams and flood control facilities -issues warning on impending breakage! spills of water 	<ul style="list-style-type: none"> -assists in the dispatch of land vehicles 	<ul style="list-style-type: none"> -assists in the evacuation of affected residents -secure the evacuation centers and the places of origin of the evacuees

d. C/MDCC

The C/MDCCs reflect basically the similar organizational set-up and tasks as that of the PDCC. Necessary adjustment is made as regards the names of the units corresponding to the level of the concerned LGUs; as follow: DECS, City/Municipal Health Office, (C/MHO), City/Municipal Social Welfare Development Office (C/MSWDO), the Municipal Engineering Office (MEO), and the Philippine National Police.

In Daraga, an important member of the Committee on Evacuation is the Municipal Agricultural Office (MAO) since the municipality has an area designated as a livestock sanctuary. The MAO assists in the hauling, transport and feeding of the ruminants (cattle, carabaos, goats), livestock and poultry from the affected barangays to the livestock sanctuary.

e. BDCC

At the BDCC level, the function of the Committee on Evacuation is mainly concentrated on the supervising and expediting the planned and controlled movement of the affected residents in an emergency. The other tasks related to evacuation are distributed to the other committees as shown in the following table.

Tasks of the BDCC Service Committees in Relation to Evacuation Activities

Service Committees								
Warning	Evacuation	Disaster Relief	Medical	Damage Control	Security	Supply	Transportation	Communication
<ul style="list-style-type: none"> - insures that warning signals can be received by all residents in the barangay 	<ul style="list-style-type: none"> - supervises and expedites the planned and controlled movement of all affected residents in an emergency - plans movement routes and established movement procedures 	<ul style="list-style-type: none"> - receives evacuees / victims from the Evacuation Service Reader - provision of housing for displaced persons of evacuees - receives and distributes supplies needed in the evacuation centers 	<ul style="list-style-type: none"> - supervises the selection of first aid and /or medical treatment areas in shelters - directs first aid and /or medical self-help operations and controls access to medical supplies - maintains adequate sanitation and hygienic standards - inspects the storage and handling of food and drinking water in shelter areas 	<ul style="list-style-type: none"> - clears roadways and streets of fallen trees and other debris - put marks or sign on unrepaired dangerous structures / facilities - maintains the physical facilities of the evacuation centers 	<ul style="list-style-type: none"> - protects persons and properties in vacated houses or areas, evacuation centers - coordinates with the PNP for the security of the areas 	<ul style="list-style-type: none"> - receives and distributes supplies 	<ul style="list-style-type: none"> - supports the transportation needs of the barangay during evacuation activities 	<ul style="list-style-type: none"> - receives warning and disseminates information to Warning Service Leader

Source: Barangay Disaster Manual, OCD

The BDCC Committee on Evacuation is composed of an Evacuation Service Leader with the Block Leaders as members. Their tasks are as follows:

Tasks of the Evacuation Service Leader:

- plans movement routes and establishes movement procedure to give effect to the Evacuation Plan;
- divides the barangay area into convenient zones or blocks and assigns block leaders; and
- directs and supervises evacuation activities during drills and actual emergencies.

Tasks of the Block Leaders:

- makes certain that routes are clearly identified and made known to the residents concerned;
- maintains a roster of physically handicapped persons regularly in the area and making appropriate special provisions for their movement in an emergency;
- assures that the procedures to be followed on the receipt of the warning signals are known to all residents and any other alarm signal provided for in the plan;
- assures that all persons have vacated the assigned area as required by the plan.

Assessing the organizational set-up of the C/MDCCs and the BDCC, it is noted that the BDCC is organized in such a way that it has counterpart committees with the C/MDCC to ensure the complementation of roles between the higher and lower DCCs during occurrence of disasters.

However, it is evident that there is still a need to strengthen the BDCCs in the Study Area to enable its officers and members to undertake their tasks as mandated in the Barangay Disaster Manual on the following aspects: preparation of the Disaster Preparedness Plan, functions and responsibilities of the different BDCC officials and for those tasked with evacuation related activities: preparation of evacuation plan, processes and requirements in the conduct of evacuation and assistance in the management of evacuation centers.

In the Study on Calamities and Casualties by Flood and Debris Flow conducted by the JICA Study Team, it was revealed that seven (7%) percent of the BDCCs in the Study Area are not functional. The evacuation systems

and procedures are supposedly an integral part of the Operations Manual of the Disaster Preparedness Plan (DPP); however, the same study shows that 79% of the 112 surveyed barangays are without the written DPPs. This happens when a new set of barangay officials are elected and documents are not turned over by the former leaders. It was also found out that 60% of the 1,000 respondents are not aware of the existence of the BDCCs in their barangays. This has reference with the barangay leaders taking a more active role in disaster related activities.

f. Evacuation Center Management Staff

The day-to-day operations of the Evacuation Center is being managed by the Evacuation Center Staff (Source: DSWD Guidelines in the Management of Evacuation Centers) composed of the following:

- for an Evacuation Center with the capacity for 300 families or less:
 - 1 Evacuation Center Head
 - 3 to 4 volunteers

- for an Evacuation Center with a capacity of above 300 to 500 families:
 - 1 Evacuation Center Head
 - 2 Assistants
 - 5 to 8 volunteers

The Evacuation Center Head is tasked to supervise the following: (a) receiving of evacuees and allocating room assignments; (b) conduct of orientation to the evacuees on rules and regulations in the center; (c) receiving, allocation and distribution of relief goods; (d) conduct of periodic group and general assembly meetings to discuss issues affecting the evacuees and the corresponding solutions; (e) planning of drills and exercises for the evacuees; (f) setting up of NGO desk to coordinate work and assistance of NGOs; (g) preparation of daily disaster monitoring report; (h) installation of recording and filing system; and (i) coordination of work of the GO and NGOs assisting in evacuation-related activities.

One of the Assistants is expected to handle the NGO desk and the activities of the volunteers while the other Assistant is responsible for the record keeping.

On the part of the evacuees, each room select a Team Leader and an Assistant who assist the Evacuation Center Head on the following activities: updating of the masterlist of the evacuees, maintaining the cleanliness and

sanitation in their assigned rooms and the surrounding areas, cooking of food, mass feeding and dishwashing.

Non-Government Organizations and Volunteer Groups

In Albay Province, the NGOs and Volunteer Groups active in evacuation activities include the Philippine National Red Cross (PNRC), the Social Action Center (SAC), the Bicol Small Business Institute (BSBI) and the Albay Legazpi Emergency Rescue Team. They are mainly involved in the rescue operations and relief assistance in times of evacuation.

3) Funding Sources

The main source of funding for evacuation activities is mainly from the 5% LGU Calamity Fund. The NGOs are using their own fund in the relief operations conducted at the evacuation centers. The other source of funds is the donation from private individuals and groups.

(2) Evacuation Facilities

1) Conventional Evacuation Center

The evacuation centers commonly used to accommodate the affected families at times of volcanic eruptions, typhoons and floods are the school buildings. In some cases, the barangay halls, chapels and public and private establishments are utilized to provide haven for the evacuees.

For the Mayon Volcano eruption, the main criterion is that the evacuation center must be located outside the danger zones. On the other hand, those which are used as evacuation centers during typhoons must be located in areas safe from floods and must have strong roofing to protect the evacuees.

The duration of the stay of the affected residents in the evacuation centers will depend on the nature of the hazards. The stay in the evacuation centers during typhoons and floods usually range from a few hours to one day. The evacuees usually return to their residences once the warning signal has been lowered or the flood has already subsided.

Meanwhile, the stay of the affected residents at the evacuation center during the eruption of the volcano can last up to three months. Such situation happened in February 1993.

In the Study Area covering 112 barangays, there is an estimated population at risk of 77,363 that are usually evacuated at times of disasters to 88 identified evacuation centers; as follow:

City/Municipality	Est. Population at Risk (a)	No. of Evacuation Center (b)	Ave. Population at Risk/Center (c=a/b)	Estimated Total Floor Area (d)	Ave. Floor Area/Center (e=d/b)	Estimated Floor Area/Evacuee (f=e/c)
Bacacay	2,474	4	618		1,035	1.67
Camaling	6,057	12	504	5,660	471	0.93
Daraga	5,099	11	463	12,299	1,109	2.39
Guinobatan	14,475	13	1,113	21,088	1,622	1.45
Ligao	5,061	7	723	10,971	1,567	2.16
Malitipot	8,759	7	1,237	4,997	713	0.57
Malinao	1,123	3	374	655	218	0.58
Sto. Domingo	11,351	8	1,418	34,322	4,290	3.02
Tabaco	10,726	18	595	6,766	375	0.63
Legazpi City	12,238	5	2,447	19,729	3,945	1.61
TOTAL	77,363	88	879	120,627	1,370	1.55

Source: Provincial Disaster Management Office

The absolute minimum space for an individual in an emergency situation is 3.52m² (Source: Disaster Preparedness Programs for LGUs in the Philippines). The figure of 1.55m² per evacuee shown in this table substantiates the common complaints of evacuees during their prolonged stay at the evacuation centers; namely: overcrowding and lack of privacy.

Some of the schools do not have any water or toilet facilities. Most have such facilities but these are meant for the use of the school children and school personnel, hence the limited number available for use of the evacuees. The following table shows that 59% of the evacuation centers have faucets while 76% have toilet facilities.

Municipality	No. of Evacuation Centers	Faucets		Toilet Facilities	
		With	Without	With	Without
Bacacay	4	1	3	3	
Camalig	12	4	8	7	
Daraga	1	7	4	10	
Guinobatan	13	6	7	8	
Ligao	7	6		6	
Malilipot	7	3		2	
Malinao	3	2		2	
Sto. Domingo	8	7 (2 are tent cities where water is rationed)		8 (2 are tent cities using portable toilets)	
Tabaco	18	1	5	16	2
LegazpiCity	5	3	2	5	
TOTAL	88	52	36	67	21

Sources of Data : Regional Disaster Coordinating Council, Region V
Provincial Disaster Management Office
City/Municipal Disaster Coordinating Councils
Department of Education, Culture and Sports, Region v

According to the “DSWD Guidelines in the Management of Evacuation Centers During Disasters”, there should be at least 1 toilet facility and a faucet (wash stand) for every 20 families or 100 individuals in an evacuation center. Table XIX 1.1 presents the present situation of the evacuation centers in the barangays covered by the Study Area. The table shows the additional space needed (148,990m²) in order that the desired standard of 3.52m² can be attained. Around 1,314 additional toilet facilities, 857 shower facilities, and 929 faucets are also required to improve the condition in these evacuation centers.

Figure XIX 1.3 shows the location map of the existing evacuation centers in the Study Area.

In the 1993 eruption of Mayon Volcano, some of the schools like the Albay Central School and the Gogon Central Schools were provided with additional facilities like toilet and bath rooms as well as communal kitchens for the use of the evacuees. However, in the recent visits conducted to these schools, the said facilities are in a state of dilapidation due to the problem of maintenance. The DECS does not have the funds for maintaining the facilities. The school officials are still requesting for the assistance of the LGUs on this matter. Hence, the issue of the maintenance of the improved facilities must be settled in order to ensure their long-term use.

The barangay halls, chapels, church and the public and private establishments that also serve as evacuation centers are lacking the same facilities since they are constructed not for evacuation purposes.

During the stay of the evacuees in the schools, classes are usually suspended. However, in cases of prolonged stay of the evacuees (i.e. 3 months during the eruption of Mayon Volcano, the school authorities undertake remedial measures to continue the holding of classes under the circumstances. The measures include the merging of classes, conduct of 3 shifts of classes in one day, or holding of classes in the school yard.

2) Sanctuary for Livestock

One of the reasons for the reluctance of the affected families to evacuate is the lack of space at the evacuation centers to accommodate their livestock and poultry. Since the evacuation centers are mostly school buildings, the accommodation of such animals will always pose a problem to the concerned authorities. Hence, the preference of some of the families to remain in their respective homes or to go back to their farms even if it is not yet allowed.

It is only in the municipality of Daraga that the LGU has designated an animal sanctuary that has an area of around 1,000m². Located around 5km. from the evacuation center, the supervision of the said sanctuary is with the Municipal Agricultural Office (MAO). The office is also arranging for the transport of the animals from the barangays to the sanctuary and back and is providing support in terms of feeds and medicines at times of evacuation.

3) Shelter for Emergency

The main source of income of the residents in the Study Area is farming. The farms, however, are mostly located within the identified danger zones around Mayon Volcano and are quite far from the designated evacuation centers. Should the farmers be caught by the hazard (eruption, mud and debris flow, heavy rains) while they are in the farms, there is no shelter that can provide them protection from this hazard that may result to loss of lives.

(3) Transportation and Communication Facilities

The PDMO, which acts as the Secretariat of the PDCC, has the essential communication equipment to perform its tasks during evacuation. The same holds true with the C/MDCCs. The situation is different at the BDCC level which

mainly rely on the radio broadcast and the personal visit of the C/MDCC members to get the information.

During disasters which affect the whole province or two or more municipalities of Albay, the vehicles from the public and private organizations are centralized at the PDCC which dispatch them to the city or municipality urgently needing these vehicles. This arrangement is also being observed at the C/MDCCs if the disaster is only affecting the city and a municipality (Figure XIX 1.4). Again due to limited number of available vehicles, priorities are also being made into which barangays that the vehicles will be sent. Hence, in most instances, the BDCCs have the responsibility of providing the needed vehicles and ensuring that the timely issuance of warning can be sent to the residents so that the latter can evacuate on their own.

1) Transportation Facilities

a. Available transportation facilities at the PDCC

At times of disaster affecting the whole province or most of the municipalities in Albay, it is a policy that all transportation facilities from government organizations, NGOs and the private sector/individuals that are made available for disaster response including evacuation are turned over to the PDCC for operational direction and control. This aims to facilitate the mobilization of vehicles in relation to priority cases. The PDCC in turn, release the vehicles to designated City/Municipalities in full tank and official drivers for immediate response to emergency situations.

The PDCC, through the PDMO, conducts an assessment of the situation and requests for the support of the government and the private sector for the needed vehicles. The limited number of vehicles available at the C/MIBDCC levels necessitates the centralization of vehicles at the PDCC level so that priority cases needing transportation support can be immediately given attention.

The PDCC has a rescue vehicle in its possession for its day-to-day activity.

b. Available transportation facilities at the C/M/DCCs

The vehicles at the Disaster Operations Centers at this level range from trucks, motorcycles, tricycles, cars, bicycles and others (ambulance, buses, passenger jeepneys). Some of these vehicles are owned by the municipal government while others are being lent or rented to LGUs by the private sector.

Available Transportation Facilities, CIMDCC Level

Municipality	Truck	Motorcycle	Tricycle	Car	Bicycle	Ambulance
Bacacay	2	2				
Camalig	2					
Daraga	3	2		4		
Guinobatan	1	1	1	1	1	
Ligao	8	20		6		
Malilipot	1	3	1			1
Malinso		5		2	1	
Sto. Domingo	5	15				
Tabaco	4	6		3		
Legazpi City	8	5		10	14	
Total	34	59	2	26	17	1

Source: Interviews with the C/MDCC members

c. Available transportation facilities at the BDCCs

At the BDCC level, the most common means of transportation for the Disaster Operations Centers are trucks, jeepneys (being rented), motorcycles, tricycles and bicycles. Fifty-one of the barangays in the area do not have any transportation facility (JICA Survey on Calamities and Casualties by Flood and Debris How).

Available Transportation Facilities, BDCC Level

Municipality	Type of Vehicles						
	Truck	Motor-cycle	Tricycle	Car	Bicycle	Jeepney	None
Bacacay	-	-	1	1	2	-	2
Camalig	8	-	9	-	-	1	4
Daraga	7	-	28	10	20	8	7
Guinobatan	1	1	3	-	7	4	6
Ugao	2	1	7	3	-	5	2
Malilipot	1	1	10	1	-	3	4
Malinao	-	5	7	1	10	3	2
Sto. Domino	5	-	-	2	-	3	6
Tabaco	1	3	14	1	7	4	10
Legazpi City	7	101	35	3	-	20	8
Total	32	112	114	22	46	51	51

Source: JICA Survey on Calamities and Casualties by Flood and Debris Flow

2) Communication Facilities

a. Available communication facilities at the PDCC

The PDCC, through the PDMO, is equipped with the necessary communication facilities such as a 24-hour Albay Provincial Radio Communication System, 17 UHF, Porta Units, 2 base units, 2 repeater sets and VHF hand held radios to respond to emergency situations, particularly evacuation.

b. Available communication facilities at the C/MDCCs

At the C/MDCC level, the available communications facilities include the telephone, hot line telephone (line is for exclusive use for receiving and making disaster-related calls), fax, VHF radio, SSB radio, PLECS and commercial radios (battery operated and electric-powered). Hence, communication is established with the higher DCCs as well as with the other line agencies and non-government organizations. However, due to the absence of communication facilities in most of the barangays, there is a problem on the relay of messages between the BDCCs and the higher DCCs.

c. Available communication facilities at the BDCCs

The BDCCs generally have limited communication facilities. In the survey conducted by the JICA Study Team, 50% (56 out of the 112 barangays) do not have any communication facilities. Among these BDCCs, there are only 18.75% that have VHF radios and 5.75% with telephones to link them with the upper DCCs.

1.2 Proposed Evacuation Plan

(1) Purpose of the Project

a. To protect human lives from hazards

(2) Basic Design Condition

1) Time Required for the Evacuation by Hazard

a. Mayon eruption

The evacuation plan should be able to facilitate the transfer of residents of the affected areas to the evacuation centers or safe areas within 24 hours upon the issuance of the Alert Level 3 by the PHIVOLCS.

b. Mud and Debris Flow

The evacuation plan should be able to facilitate the transfer of the residents of the affected areas to the evacuation centers or safe areas within 2 hours upon the issuance of Warning Level 3 by the DPWH and ROCD.

c. Flood and Typhoon

The evacuation plan should be able to facilitate the transfer of the residents to the evacuation centers or safe areas within 3 hours upon the issuance of Warning Level 3 of PAGASA.

The conduct of the pilot project is envisioned to validate the possibility of shortening the time of evacuation particularly for mud and debris flow and flood and typhoon.

2) Procedures

- a. The timely issuance of warning and the subsequent evacuation can be effected with the installation of appropriate equipment designed to provide information on the occurrence of volcano eruption, mud and debris flow, and typhoon and flood,
- b. The strengthening of the capability of the PDMO in acting as the communication center between the agencies issuing the warning (PAGASA, PHIVOLCS, ROCD) and advisories to the affected municipalities and cities.
- c. The provision of the means of communication between the C/MDCCs and the BDCCs.
- d. Improvement of the coping mechanism of the community through the conduct of regular disaster awareness and preparedness programs. A concrete example is the conduct of regular drill on specific hazard to improve the disaster prevention capabilities of the local people.
- e. Improvement of the capability of the BDCCs in the performance of evacuation-related tasks
- f. Preparation and updating of Disaster Preparedness Plans at the BDCC level

Other detailed improvements in the evacuation procedures will be substantiated after the implementation of the pilot project.

3) Organization and Staffing

- a. Evacuation is a local function meaning that the C/MIBDCCs are given the responsibility of undertaking evacuation-related activities. At all levels of DCCs, there is a Committee on Evacuation that is tasked with matters related to ensuring the safety of the affected residents at times of disasters. There should be a deliberate effort to increase the capability of these Committees in performing their tasks particularly on evacuation through institutional strengthening measures. The areas of coordination between them must also be established so that complementation of functions as well as resources among these committees can be attained effectively. The tasks of each member of the Committee on Evacuation at all levels (P/C/M/BDCCs) are already clearly stated. What is more important is enhancing the capabilities of the members to perform their tasks to prevent loss of lives during disasters.

4) Facilities

a. Basic Concepts

- The existing evacuation centers are expanded to accommodate the evacuees
- The facilities of the existing evacuation centers are enhanced to provide a more comfortable accommodation to the evacuees
- The provision of emergency shelters to those who may have lost the opportunity to go to the evacuation centers
- The provision of livestock sanctuaries to give protection to the livestock of the evacuees

b. Criteria for Planning

- Standard area for evacuation center is 3.52m² per person*
- Standard number of toilet facilities in evacuation center is 1/25 persons
- Standard number of faucets in evacuation center is 1/50 persons
- Standard number of shower facilities is 1/50 persons for evacuees during the volcano eruption
- Standard number of emergency shelter is one per major river basin**
- Standard number of livestock sanctuary is one per municipality***

Bases: * Bases: Disaster Preparedness Programs for LGUs in the Philippines

** Farmers are cultivating land in these areas at any given time during the day

*** Each livestock sanctuary can provide shelter to around 5% of the livestock in any given municipality or city

1.3 Facility Planning

(1) Evacuation Centers

1) Coverage of each evacuation center

There are initially 56 evacuation centers (school buildings) in the Study Area that are recommended to be improved during the priority projects implementation (Figure XIX 1.5). These will cover the following barangays:

Bacacay	Lower Bonga, Hindi, Bayombong, Bgy.12 Poblacion, Sogod
Camalig	Ilawod, Libod, Ligban, Salugan, Tagaytay, Poblacion
Daraga	Busay, Alcala, Kilicao, Matabog, Malobago, Matnog, Binitayan, Budiao, Culiati, Tagas
Guinohatan	Upper Binogsacan, Dons Tomasa, tiawod, Maipon, Maninila, Masarawag, M. Pequeno, San Rafael, Tandarora, Travesia, Bubulusan, Lower Binogsacan, Calzada
Ligao	Amtic, Baligang, Binanowan, Nabonton, Nasisi, Tambo, Tinago
Matilipot	Binitayan, Canaway, San Francisco, San Jose, San Roque, Sta. Cruz, Poblacion Bgy.2, San Isidro Iraya
Malinao	Awang, Balading, Balza, Cabunturan, Paws, Psyahan, Sta. Elena
Sto. Domingo	Fidel Surtids, Udong, San Femando, San Isidro, San Roque (Lower), San Roque (Upper), Sta. Misericordia, Sto. Domingo (Poblacion), San Andrea
Tabaco	Bantsyan, Bongsong, Bonot, Buang, Buhian, Comon, Mariroc, Oson, San Isidro, Baranghawon, Comon, Mataghac, Pinagbobong, Quinsatillohan, San Antonio, San Lorenzo, San Roque, San 'v'icente, Tagas
Legazpi City	Arimbay, Bagong Abre, Bigas, Dits, Bogtong, Bgy 16, Washington East, Paws, San Joaquin

2) Improvement of existing evacuation centers

The assessment shows that needed improvements must be undertaken so that the existing evacuation centers will meet the necessary standards, namely:

- a. provision of 3.52m² as absolute minimum space to an evacuee
- b. provision of 1 toilet facility for every 25 individuals;

- c. provision of 1 faucet for every 50 individuals; and
- d. provision of 1 shower facility for every 50 individuals.

These improvements will necessitate the following:

- construction of 775 additional rooms (1 room = 48m² for a total of 37,200m²) in 56 schools located in the Study Area during the implementation of Phase 1 of the project;
- construction of 1,314 sets of toilet facilities;
- construction of 857 shower facilities in evacuation centers for volcano eruption evacuees; and
- water supply system with 929 faucets.

The assessment of the evacuation system shows that there is a need to construct a total of 3,100 additional rooms to meet the space requirements of 148,990m² for the evacuees. However, it is being proposed that the construction of the target units be undertaken in four phases (Table XIX 1.2)

Phase 1 will mean the construction of the 775 rooms which will be undertaken in the 5-year implementation of the priority projects. The remaining balance (Phases II-IV) will be considered for construction during the period of Master Plan implementation.

The construction of the additional rooms in the identified evacuation centers in Phase 1 is distributed as follows:

City/Municipality	No. of Evacuation Centers	No. of Additional Rooms
Bacacay	3	23
Camalig	7	85
Daraga	7	63
Guinobatan	7	104
Ligao		49
Malilipot		1 1 1
Malinso		24
Santo Domingo		39
Tabaco	10	161
Legszpi	6	116
Total	56	775

The proposed schedule of the construction for these additional rooms is as follows:

City/Municipality	No. of Rooms/Year (Phase I)					Total
	Year 1	Year 2	Year 3	Year 4	Year 5	
Bacacay	5	5	5	5	3	23
Camalig	17	17	17	17	17	85
Daraga	13	13	13	13	11	63
Guinohatan	21	21	21	21	20	104
Ligao	10	10	10	10	9	49
Malilipot	23	22	22	22	22	111
Malinso	5	5	5	5	4	24
StoDomingo	8	8	8	8	7	39
Tabaco	33	32	32	32	32	161
Legszpi City	24	23	23	23	23	116
Total	159	156	156	156	148	775

The detailed allocation of units per identified school in each city/municipality in Phase 1 is reflected in Table XIX 1.11.

The construction of the toilet facilities and faucets is proposed to be completed during the implementation of the priority projects.

With the construction of new units in the span of years to add to the existing ones, it is expected that positive change in accommodation for the affected families will be experienced at times of disasters. The prime considerations must be the safety and comfort of the evacuees.

When a disaster strikes, not all of the municipalities and barangays in the Study Area are affected and would require the evacuation of families. At such times, the concept of using inter-barangay or inter-municipality evacuation centers can be continuously adopted so that the required space per individual can also be attained. It means that the evacuation centers at the barangays and municipalities not affected by the disasters can be used by the evacuees from the other municipalities.

The proposed designs for the evacuation center, water supply, shower and toilet facilities are presented in Figures XIX 1.6 and 1.7.

3) Related facilities

a. Emergency shelter

There are 16 emergency shelters being proposed to be constructed in each of the river basin around Mayon Volcano. There is a lot of agricultural activities in these areas due to the fertile soil and favorable weather condition. These emergency shelters, each measuring 80m², are meant to provide protection to farmers who might not have the chance of going to their residences or to the

evacuation centers when hazard strikes a particular area or areas. Made of concrete materials and provided with sirens, these are proposed to be constructed in elevated portion of the land. Each shelter can easily accommodate 50 persons.

The emergency shelters are distributed as follow:

City/Municipality	No.
Bacacay	-
Camalig	2
Daraga	1
Guinobatan	2
Ugao	1
Malilipot	2
Malinso	-
Santo Domingo	3
Tabaco	3
Legazpi City	2
Total	16

The design of the emergency shelter is presented in Figure XIX 1.8.

b. Livestock sanctuary

Providing temporary shelter to the animals is a perennial problem of the evacuees. The construction of a livestock sanctuary per city/municipality (with the exception of Daraga) is being proposed. Made of semi-concrete materials and with some space for the grazing of animals, the sanctuary is proposed to be constructed in a 1,000 sq.m lot to accommodate 300 animals (particularly the carabaos and the cows which are very important to the farmers) at one time.

This space can easily accommodate 5% of the carabaos and cows and other small animals being raised in each of the city/municipality. The Socio-Economic Profile of Albay Province shows the following information regarding the average number of carabaos and cows in each city/municipality:

Animal	Average No. of heads/City or Municipality	5% (for possible evacuation to the Livestock Sanctuary)
Carabao	2,629	131
Cow	1,546	77

Hence, other small animals can also very well be accommodated in this sanctuary.

The livestock sanctuary is being proposed to be constructed in the following areas:

City/Municipality	No.
Bacacay	1
Camalig	1
Daraga	-
Guinobatan	1
Ligao	1
Matilipot	1
Malinso	1
Santo Domingo	1
Tabaco	1
Legazpi City	1
Total	9

The design of the livestock sanctuary is presented in Figure XIX 1.9.

(2) Communication System

- a. Each identified evacuation center must be provided with the VHF radio system with the same frequency as that of the P/C/MDCC to maintain the necessary communication link at times of disasters.
- b. Each shelter must be provided with a siren to facilitate the extension of the necessary warning signals to the local people in the farms and a battery-operated radio for them to know if the danger is over and the situation has return to normal condition.

(3) Effective Use of the Facilities during Non-hazard Times

a. Evacuation Centers

Since the existing evacuation centers are mainly school buildings that will only be improved to provide the necessary accommodation to the residents in times of disasters, they can be used for their original purposes once the occurrence of disaster is over. The maintenance of such facilities will be the responsibility of the DECS.

b. Emergency Shelters

As for the emergency shelters to be constructed to provide protection to the residents who are unable to go to the evacuation centers in the occurrence of hazard, their possible uses may include the following: trading posts for the agricultural products of the local people, office of the agricultural extension workers, venues for training and meetings to be conducted for the farmers or as rest areas for the farmers tilling the nearby farms. The maintenance of these facilities should be undertaken by the LGUs.

c. Livestock Sanctuary

These facilities can be used as demonstration farms or training centers of the Municipal/City Agricultural Offices during non-hazard times to improve the capability of the farmers on livestock raising.

(4) Work Volume

The estimated work volumes for the extension or enforcement of the existing facilities or new installation for Phase 1 are as follows:

Item	Unit	Nos	Volume
• Evacuation center	m ²	56	37,200
- Water supply (faucet)	unit	929	929
- Toilet	unit	1,314	1,314
- Shower facilities	unit	857	857
• Emergency shelter	m ²	16	1,280
• Livestock sanctuary	m ²	9	9,000

1.4 Disaster Awareness Promotion

The people in the Study Area have a lot of experiences when it comes to the types (volcano eruption, mud and debris flow, typhoon and flood) as well as to the effects of such hazards in their lives and properties. What will be necessary to further improve or develop will be their coping capacity to the occurrence of disasters brought about by their vulnerabilities to these hazards in order to prevent loss of lives.

Based on the assessment of the current situation concerning evacuation, specific training programs are recommended to be developed/improved and implemented to strengthen the capability of the community leaders and residents to undertake evacuation-related activities on their own. The suggested training programs are as follows:

- a. For the barangay/BDCC officials
 - organization of BDCCs
 - formation of rescue teams, rescue operation and first aid
 - preparation of Disaster Preparedness Plan
 - formation of evacuation center staff
 - evacuation center management
 - stockpile management
 - alert signals for Mayon Volcano eruption

- b. Community residents
 - alert signals for Mayon Volcano eruption
 - mud and debris flow evacuation drill
 - barangay evacuation plan
 - formulation of family disaster preparedness plan
 - evacuation center management

- c. Evacuation center staff
 - evacuation center management
 - C/M/BDCC Disaster Preparedness Plan
 - first aid
 - stress management
 - mud and debris flow evacuation drill

Table XIX 1.1 Profile of Existing Evacuation Centers in the Study Area - Bacacay

Hazard: Eruption

Barangay	Affected		Area Required	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)	Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets		Shower
	HHs	Ind				Persons	m ²	Ex	Add'l	Ex	Add'l	
Lower Bonga	161	904	3,182	Evacuation Center Bacacay East Central School	436	468	1,646	2	16	5	31	18
SUBTOTAL	161	904	3,182		436	468	1,646	2	16	5	31	18

Hazard: Flood

Barangay	Affected		Area Required	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)	Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets	
	HHs	Ind				Persons	m ²	Ex	Add'l	Ex	Add'l
Hindi	40	204	718	Hindi Elem/School	150	54	190	none	4	2	6
Bayandong	191	1,168	4,111	Bayandong Elem School	136	1,032	2,182	none	23	4	42
Bgy. 12 Poblacion	10	53	186	Barangay Hall	17	36	126	none	none	none	none
Sogod	27	145	510	Bacacay East Central Sch.	145	none	none	2	none	5	none
SUBTOTAL	268	1,570	5,525		448	1,122	2,498	2	27	11	48

TOTAL	429	2,474	8,707	0	4,140	884	1,590	4,144	4	43	16	79	18
--------------	-----	-------	-------	---	-------	-----	-------	-------	---	----	----	----	----

Table XIX 1.2 Profile of Existing Evacuation Centers in the Study Area - Camalig

Hazard: Eruption

Barangay	Affected		Area Required m ²	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)	Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets		Shower
	HHs	Ind				Persons	m ²	Ex	Add'l	Ex	Add'l	
Illawod	470	2,488	8,758	Evacuation Center Camalig North Central School	136	2,352	8,278	4	45	4	95	49
Libod	250	1,371	4,826	Cotmon Elem. School	204	1,167	4,106	none	27	4	50	27
Ligban	139	652	2,295	Baniw Elementary School	82	570	2,007	none	13	4	22	13
Salugan	149	785	2,763	Illawod Elementary School	218	349	1,227	none	7	-	15	7
Tagaytay	50	255	897	& Catmon Elem. School	218	218		none	3	-	10	3
				Baligang Elementary School	123	12	42	none	2	6	10	2
				Taladong Elem. School	120			none				
SUBTOTAL	1,058	5,551	19,539		1,101	4,450	15,660	4	104	18	217	108

Hazard: Flood

Barangay	Affected		Area Required m ²	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)	Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets	
	HHs	Ind				Persons	m ²	Ex	Add'l	Ex	Add'l
Illawod	10	50	176	Evacuation Center Illawod Elementary School	50	-	-	4	-	4	-
Libod	5	26	92	Libod Elementary School	26	-	-	none	1	4	-
Ligban	18	93	327	Neighbors	93	-	-	n.a.	-	-	-
Poblacion	10	52	183	Camalig North Central School	52	-	-	4	-	4	-
Salugan	50	285	1,003	Provincial Engr. Office	285	-	-	n.a.	-	-	-
				Barangay Hall							
SUBTOTAL	93	506	1,781		506	-	-	8	1	12	-

TOTAL	1,151	6,057	21,320	0	1,607	4,450	15,660	12	105	30	217	108
--------------	--------------	--------------	---------------	----------	--------------	--------------	---------------	-----------	------------	-----------	------------	------------

Table XIX 1.3 Profile of Existing Evacuation Centers in the Study Area - Daraga

Hazard: Eruption

Barangay	Affected		Area Required m ²	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)		Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets		Shower
	HHs	Ind		Area(m ²)	Evacuation Center		Persons	m ²	Ex	Add'l	Ex	Add'l	
Busay	50	259	912	Busay Elementary School	259	-	1	4	3	7	5		
Alcala	150	795	2,798	Binitayan Elem. School	136	373	none	8	2	13	8		
				Upper Malabog Elem. School	286		1	6	4	11	7		
Kilicao	10	54	190	Kilicao Elem. School	54	-	1	-	2	-	4		
Malabog	58	300	1,056	Daraga north Central School	300	-	4	2	4	8	6		
Malabago	114	597	2,101	Bascaran Elem. School	136	325	1	5	2	10	6		
				Anislag	136		1	5	4	8	6		
Matnog	192	1,136	3,998	Banag Elem. School & Daraga North Central School	82	-	none	11	2	3	5		
					695	-	4	7	4	18	17		
SUBTOTAL	574	3,141	11,055		2,084		13	48	27	78	64		

Hazard: Flood

Barangay	Affected		Area Required m ²	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)		Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets	
	HHs	Ind		Area(m ²)	Evacuation Center		Persons	m ²	Ex	Add'l	Ex	Add'l
Binitayan	36	190	668	Binitayan Elem. School	136	54	188	-	-	-	-	
Malabago	56	291	1,024	Binitayan Elem. School	136	155	544	none	3	2	3	
Budiao	117	655	2,305	Baraga North Central School	655	-	-	4	2	-	7	
Culliat	30	147	517	Culliat Elementary School	136	11	37	1	1	4	16	
Kilicao	75	405	1,425	Barangay hall	17	198	693	none	1	none	-	
				Kilicao Elementary School	190	-	-	1	2	2	12	
Tagas	49	270	950	Tagas Elementary School	136	134	470	1	1	2	8	
SUBTOTAL	363	1,958	6,889		1,406		1,932	7	10	10	46	

TOTAL	937	5,099	17,944	12,299	3,490	1,250	4,389	20	58	37	124	64
--------------	------------	--------------	---------------	---------------	--------------	--------------	--------------	-----------	-----------	-----------	------------	-----------

Table XIX 1.4 Profile of Existing Evacuation Centers in the Study Area - Guinobatan

Hazard: Eruption

Barangay	Affected		Area Required	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)		Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets		Shower
	HHs	Ind		Area(m ²)	Evacuation Center		Persons	m ²	Ex	Add'l	Ex	Add'l	
Upper Binogsacan	9	48	168	Barangay Chapel	60	17	31	108	none	-	none	-	-
Dona Tomasa	181	937	3,298	Guinobatan West Central School	1,536	436	311	1,090	none	9	6	13	10
Ilawod	134	683	2,404	BUCAF Auditorium	672	190	-	-	none	9	none	18	10
Maipon	257	1,263	4,445	Guinobatan West Central School	1,536	436	410	1,442	4	9	10	17	27
Maninila	222	1,243	4,375	Guinobatan West Central School	1,632	463	827	2,909	-	25	6	44	25
Masarawag	583	2,742	9,651	Guinobatan West Central School	1,536	436	1,770	6,230	2	22	4	-	-
				Travesia Elementary School	1,200	340	-	-	-	2	6	-	-
				Lower Binogsacan Elem. School	689	196	-	-	2	25	6	7	7
M. Pequeno	295	1,631	5,741	Guinobatan West Central School	1,536	436	855	3,005	none	16	6	5	4
				Travesia Elementary School	1,200	340	-	-	2	14	6	-	-
San Rafael	384	2,081	7,325	Guinobatan West Central School	1,536	436	1,645	5,789	none	22	6	21	20
Tandarora	27	145	510	Travesia Elementary School	510	145	-	-	2	-	6	-	-
Travesia	50	305	1,073	Travesia Elementary School	1,073	305	-	-	2	-	6	-	-
SUBTOTAL	2,142	11,078	38,990		15,678	4,449	6,629	23,316	16	155	70	125	103

Hazard: Flood

Barangay	Affected		Area Required	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)		Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets	
	HHs	Ind		Area(m ²)	Evacuation Center		Persons	m ²	Ex	Add'l	Ex	Add'l
Bubulusan	84	428	1,506	Bubulusan Elem. School	240	68	360	1,266	none	8	2	1
Lower Binogsacan	16	76	267	Lower binogsacan Elem. School	144	40	36	123	1	-	2	-
Calzada	30	150	528	Guinobatan West Central School	528	150	-	-	none	2	6	-
Dona Tomasa	20	102	359	Private houses	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-
Ilawod	22	112	394	BUCAF Auditorium	394	112	-	-	none	1	none	-
Maipon	63	308	1,084	Maipon Elementary School	240	68	240	844	1	5	2	10
Masarawag	100	560	1,971	Barangay High Sch.(site 1)	960	273	287	1,011	2	9	4	18
M. Pequeno	115	632	2,224	M.Pequeno Elem. School	240	68	524	1,840	2	6	2	10
				Lower Binogsacan Elem. Sch.	144	40	-	-	1	1	2	-
San Rafael	10	56	197	Day Care Center	60	17	39	137	none	-	none	-
Tandarora	99	613	2,157	Barangay Hall	60	17	256	897	none	-	none	-
				Travesia Elementary School	1,200	340	-	-	2	-	6	-
Travesia	59	360	1,267	Travesia Elementary School	1,200	340	20	67	2	-	6	-
SUBTOTAL	618	3,397	11,954		5,410	1,533	1,762	6,185	11	32	32	39

TOTAL	2,760	14,475	50,944	21,088	5,982	8,391	29,501	27	187	102	164	103
--------------	--------------	---------------	---------------	---------------	--------------	--------------	---------------	-----------	------------	------------	------------	------------

Table XIX 1.5 Profile of Existing Evacuation Centers in the Study Area - Ligao

Hazard: Eruption

Barangay	Affected		Area Required m ²	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)		Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets		Shower
	HHs	Ind		Area(m ²)	Evacuation Center		Persons	m ²	Ex	Add'l	Ex	Add'l	
Amtic	185	1,087	3,826	1,056	Ligao East Central School (Tuburan)	300	787	2,770	4	17	22	21	22
Baligang	22	819	2,882	2,064	Ligao West Central School (Binatagar)	586	233	818	4	12	40	-	16
Binanoan	125	661	2,326	1,506	Ligao East Central School	300	198	696	-	13	-	25	7
				572	Ligao Mun Tech Voc Sch.	163			2		4	20	6
Nabonton	164	974	3,428	2,064	Ligao West Central School	586	388	1,364	-	19	-	19	19
Nasisi	153	844	2,970	2,064	Ligao West Central School	586	258	906	-	16	-	16	16
Tambo	30	162	570	480	Tambo Elementary School	136	26	90	3	-	2	6	3
SUBTOTAL	679	4,547	16,002	9,806		2,657	1,890	6,644	13	77	68	107	89

Hazard: Flood

Barangay	Affected		Area Required m ²	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)		Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets	
	HHs	Ind		Area(m ²)	Evacuation Center		Persons	m ²	Ex	Add'l	Ex	Add'l
Binanoan	30	156	549	480	Binanoan Elem. School	136	20	69	2	1	2	6
Nabonton	15	88	310	310	Nabonton Elem. School	88	-	-	2	-	2	1
Nasisi	5	27	95	60	Barangay hall	17	10	35	none	none	none	-
Tambo	30	162	570	480	Tambo Elementary School	136	26	90	2	-	2	-
Tinago	15	81	285	285	Tambo Elementary School	81	-	-	-	1	-	3
SUBTOTAL	95	514	1,809	1,615		458	56	194	6	2	6	10

TOTAL	774	5,061	17,811	11,421		3,115	1,946	6,838	19	79	74	117	89
--------------	------------	--------------	---------------	---------------	--	--------------	--------------	--------------	-----------	-----------	-----------	------------	-----------

Table XIX 1.6 Profile of Existing Evacuation Centers in the Study Area - Malilipot

Hazard: Eruption

Barangay	Affected		Area Required m ²	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)	Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets		Shower
	HHs	Ind				Persons	m ²	Ex	Add'l	Ex	Add'l	
Binitayan	182	864	3,041	Evacuation Center Malilipot Central School	136	728	2,561	2	15	8	26	17
Canaway	302	1,652	5,815	San Jose elem. School	136	1,516	5,335	-	33	-	66	33
San Francisco	243	1,008	3,548	Malilipot Central School	136	872	3,068	2	18	none	14	20
San Jose	509	1,599	5,628	San Jose Elem. School	136	1,463	5,148	none	31	-	-	-
San Roque	276	1,423	5,008	San Jose Elem. School	136	1,287	4,528	2	-	-	9	23
Sta. Cruz	207	1,059	3,727	Malilipot Central School	136	928	3,247	2	13	-	16	4
SUBTOTAL	1,719	7,605	26,767		816	6,794	23,887	8	110	8	131	97

Hazard: Flood

Barangay	Affected		Area Required m ²	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)	Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets	
	HHs	Ind				Persons	m ²	Ex	Add'l	Ex	Add'l
Binitayan	9	42	147	Evacuation Center Binitayan Elem. School	40	2	3	none	1	none	1
Poblacion Bgy 2	10	80	282	Malilipot Central School	80	-	-	2	-	8	-
San Francisco	40	200	704	San Francisco Elem School	136	64	224	2	-	none	3
San Isidro Iraya	48	244	858	San Isidro East Elem School	82	162	570	none	4	none	10
San Jose	81	462	1,626	San Jose Elem School	136	326	1,146	none	4	6	-
San Roque	13	66	232	San Roque Elem School	66	-	-	none	1	none	3
Sta. Cruz	12	60	211	Sta. Cruz Elem School	60	-	-	none	1	none	2
SUBTOTAL	213	1,154	4,060		600	554	1,943	4	11	14	19

TOTAL	1,932	8,759	30,827	4,997	1,416	7,348	25,830	12	121	22	150	97
--------------	--------------	--------------	---------------	--------------	--------------	--------------	---------------	-----------	------------	-----------	------------	-----------

Table XIX 1.8 Profile of Existing Evacuation Centers in the Study Area - Sto. Domingo

Barangay	Affected		Area Required	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)	Can be accommodated based on standards	Balance: No. of persons and space required	Faucets		Toilets		Shower
	HHs	Ind					Ex	Add'l	Ex	Add'l	
Fidel Surtida	262	1,455	5,122	Evacuation Center Salvacion Evac Center	14,866	-	none rationed	56 portable	-	-	-
Lidong	303	1,680	5,914	Salvacion Evac Center	576	-	-do-	-do-	-	-	-
Sab Fernando	285	1,565	5,508	San Andres Elem. School Gaio Evacuation Center	3,000	550	2 none rationed	29 n.a.	2 40 portable	62	31
San Isidro	250	1,350	4,725	Sto. Domingo Central School	960	272	2	25	4	54	27
San Roque (Lower)	207	1,088	3,830	Salvacion Evacuation Center	3,830	1,088	none rationed	n.a.	56 portable	-	-
San Roque (Upper)	159	834	2,935	Salvacion Evacuation Center	2,935	834	none	8	none	-	-
Sta. Misericordia	316	1,815	6,388	Salvacion Evac Center	-	-	none	-	none	-	-
Sto. Domingo (Poblacion)	132	694	2,442	Salvacion Evac Center	-	694	none	-	none	-	-
SUBTOTAL	1,914	10,481	36,864		26,167	1,628	4	62	102	116	58

Hazard: Eruption

Barangay	Affected		Area Required	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)	Can be accommodated based on standards	Balance: No. of persons and space required	Faucets		Toilets		Shower
	HHs	Ind					Ex	Add'l	Ex	Add'l	
Fidel Surtida	21	116	408	Evacuation Center Sto. Domingo Central School	408	116	2	-	4	-	-
Lidong	60	330	1,162	-do-	960	272	-do-	1	-do-	-	-
San Andres	3	16	56	Barangay hall	56	16	none	-	none	-	-
San Fernando	8	44	154	San Fernando High School	154	44	2	-	4	-	-
San Roque (Upper)	40	208	732	San Andres Elem. School	240	68	1	3	2	6	6
Sta. Misericordia	10	52	183	Sto Domingo Central School	183	52	-do-	-	-do-	-	-
Sto. Domingo	20	104	366	Sto. Domingo Municipal High Sch.	240	68	2	-	2	2	2
SUBTOTAL	162	870	3,061		2,241	234	7	4	12	8	8

Hazard: Flood

TOTAL	2,076	11,351	39,925		28,408	9,489	11	66	114	124	58
--------------	--------------	---------------	---------------	--	---------------	--------------	-----------	-----------	------------	------------	-----------

Table XIX 1.9 Profile of Existing Evacuation Centers in the Study Area - Tabaco

Barangay	Affected		Area Required	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)	Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets		Shower
	HHs	Ind				Persons	m ²	Ex	Add'l	Ex	Add'l	
Bantayan	46	257	904	Evacuation Center	123	134	472	4	1	2	8	5
Bongabong	302	1,641	5,776	Tabaco National High School	123	1,518	5,344	4	28	16	49	16
Bonot	98	539	1,897	Bantayan Elem. School	123	416	1,465	10	5	16	10	10
Buang	56	268	943	Bantayan Elem. School	123	145	511	5	3	8	5	5
Buhian	146	900	3,168	Bantayan Elem. School	178	722	2,496	1	13	2	36	18
Comon	214	1,136	3,998	Quinastillohan Elem. School	190	946	3,326	4	4	4	20	11
				San Antonio Bgy High School	240			none	4	4	18	11
Marrioc	568	3,158	11,053	Panal Bangkilingan E/S	190	2,968	10,381	4	11	6	25	31
Oson	125	674	2,372	Tabaco National High School	432	606	2,132	none	13	-	22	13
San Isidro	147	904	3,182	San Antonio Elem. School	240	68	2,942	68	18	-	36	18
				San Antonio Bgy High School	240							
SUBTOTAL	1,702	9,477	33,293		1,186	8,291	29,069	17	157	38	263	169

Hazard: Flood

Barangay	Affected		Area Required	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)	Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets	
	HHs	Ind				Persons	m ²	Ex	Add'l	Ex	Add'l
Baranghawon	10	59	207	Evacuation Center	40	15	63	2	-	5	-
Comon	12	64	225	Baranghawon Elem. School	17	47	165	-	-	-	-
Matagbac	20	102	359	Barangav Hall	82	20	71	2	-	2	-
Oson	15	80	282	Matagbac Elem. School	60	63	222	-	-	-	-
Pinagbobong	20	100	352	Chapel	68	32	112	2	-	2	4
Quinastillohan	16	90	316	Pinagbobong Elem. School	54	36	124	1	-	2	-
San Antonio	15	75	264	Quinastillohan Elem. School	34	41	144	-	-	-	-
San Isidro	30	150	528	Barangav Hall	68	82	288	2	1	2	4
San Lorenzo	10	54	190	San Isidro Elem. School	54	57	200	4	-	10	-
San Roque	25	125	440	San Lorenzo Elem. School	68	57	200	-	3	4	1
San Vicente	150	150	528	Tabaco North Elem. School	150	-	-	4	-	16	-
				Tabaco National High School	68	132	464	4	4	15	-
Tagas	35	200	704	Tabaco South Elem. School	720	525	1,853	2	2	2	2
				Tagas Elementary School	240						
SUBTOTAL	358	1,249	4,395		720	525	1,853	23	6	60	9

TOTAL	2,060	10,726	37,688		1,906	8,816	30,922	40	163	98	272	169
--------------	--------------	---------------	---------------	--	--------------	--------------	---------------	-----------	------------	-----------	------------	------------

Table XIX 1.10 Profile of Existing Evacuation Centers in the Study Area - Legazpi City

Hazard: Eruption

Barangay	Affected		Area Required m ²	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)		Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets		Shower
	HHs	Ind		Evacuation Center	Area(m ²)		Persons	m ²	Ex	Add'l	Ex	Add'l	
Arimbay	526	2,949	10,380	Albay Central School	3,072	873	2,076	7,308	6	52	6	0	58
Bagong Abre	103	556	1,957	Albay Central School	1,957	556	-	-	-	11	-	-	11
Bigaa	368	2,097	7,381	Albay Central School Bitano Elementary School	3,072 480	873 136	1,088	3,829	-	41	-	8	30
Padang	258	1,522	5,357	Bagumbayan Elem. School	480	136	1,386	4,877	-	30	-	3	30
Dita	187	1,072	3,773	Bitano Elem. School Gogon Elementary School	480 1,056	136 300	636	2,237	-	21	-	-	21
Bogtong	10	54	1,190	Taysan Elem. School	190	54	-	-	2	-	4	-	1
SUBTOTAL	1,452	8,250	30,038		10,787	3,064	5,186	18,251	10	155	10	65	151

Hazard: Flood

Barangay	Affected		Area Required m ²	Existing Evacuation Center/ Estimated Area (1 room = 48 m ²)		Can be accommodated based on standards	Balance: No. of persons and space required		Faucets		Toilets	
	HHs	Ind		Evacuation Center	Area(m ²)		Persons	m ²	Ex	Add'l	Ex	Add'l
Arimbay	173	952	3,351	Albay Central School	3,072	873	79	279	6	-	6	-
Brig 16	21	113	398	Albay Central School	398	113	-	-	-	-	-	-
Washington East	368	1,641	5,776	Albay Central School	3,072	873	768	2,704	-	-	-	-
Bigaa	107	620	2,182	Bagumbayan Elem. School	960	272	348	1,222	-	-	-	-
Padang	60	342	1,203	Bitano Elem. School	480	136	206	723	2	-	2	-
Dita	23	128	450	Bitano Elem. School	480	128	-	-	-	-	-	-
Pawa	44	246	865	Bitano Elem. School	480	136	110	385	-	-	-	-
SUBTOTAL	796	4,042	14,225		8,942	2,531	1,511	5,313	8	0	8	0

TOTAL	2,248	12,292	44,263	19,729	5,595	6,697	23,564	18	155	18	65	151
--------------	--------------	---------------	---------------	---------------	--------------	--------------	---------------	-----------	------------	-----------	-----------	------------

Source of Data: Department of Education, Culture and Sports, Region V
Regional Disaster Coordinating Council, Region V
Provincial Disaster Management Office
City/Municipal Disaster Coordinating Councils Officials
City/Municipal Social Welfare and Development Offices

**Table XIX 1.11 Proposed Schedule of Construction
of the Evacuation Centers**

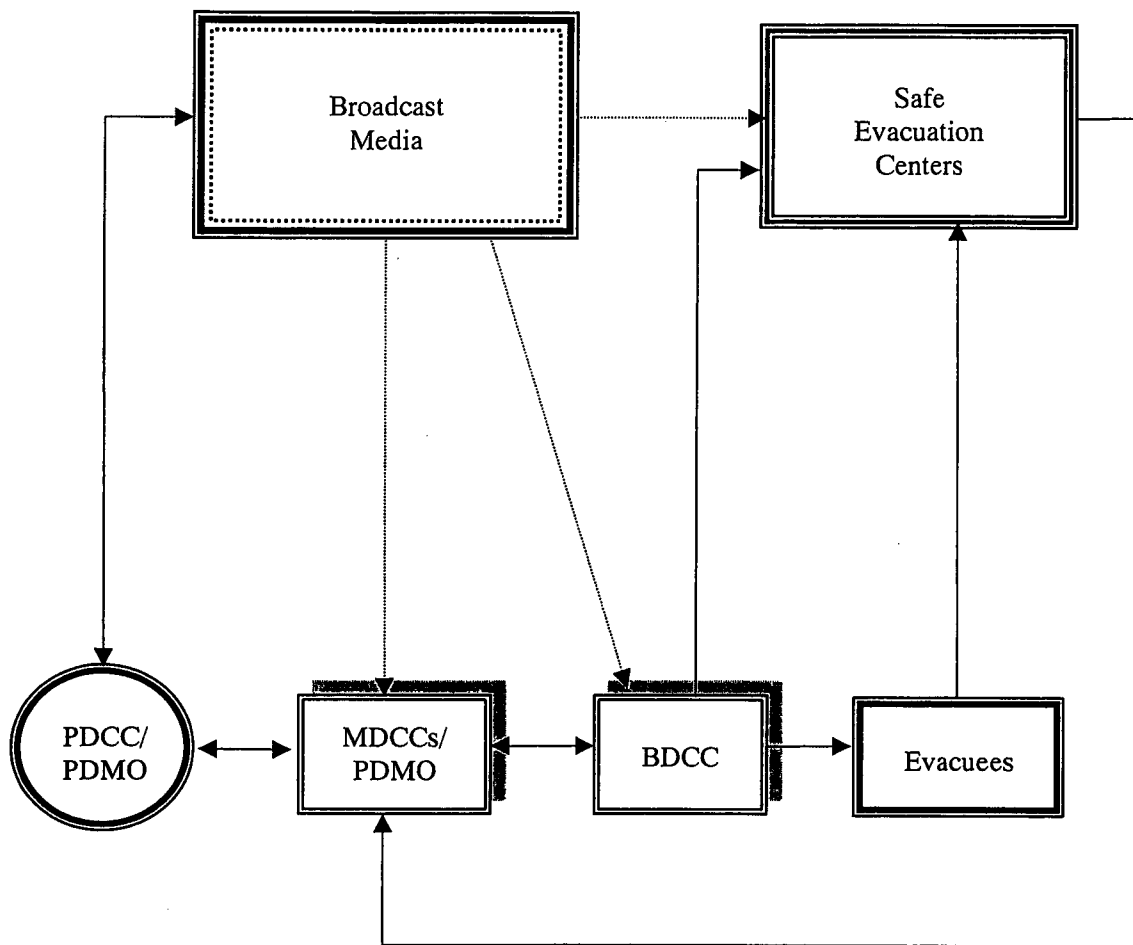
City/Municipality	Phase/No. of Centers to be Constructed				
	I	II	III	IV	Total
Bacacay	23	24	24	24	95
Camalig	85	82	80	79	326
Daraga	63	28	-	-	91
Guinobatan	104	170	170	170	614
Ligao	49	31	31	31	142
Malilipot	111	143	142	142	538
Malinao	24	-	-	-	24
Sto. Domingo	39	33	33	31	136
Tabaco	161	161	161	161	644
Legazpi City	116	125	125	124	490
Total	775	797	766	762	3,100

**Table XIX 1.12 Allocation of Additional Evacuation Unit/School During
Priority Project Implementation Stage (1/2)**

School	No.
Bacacay	
1. Bacacay East Central School	13
2. Hindi Elementary School	2
3. Bayandong Elementary School	8
Subtotal	23
Camalig	
4. Cotomon Elementary School	10
5. Camalig North Central School	35
6. Bariw Elementary School	10
7. Ilawod Elementary School	10
8. Palanog Elementary School	7
9. Baligang Elementary School	6
10. Taladong Elementary School	7
Subtotal	85
Daraga	
11. Binitayan Elementary School	9
12. Upper Malabog Elementary School	9
13. Anislag Elementary School	9
14. Kilicao Elementary School	9
15. Daraga North Central School	15
16. Bascaran Elementary School	6
17. Tagas Elementary School	6
Subtotal	63
Guinobatan	
18. Guinobatan West Central School	30
19. Bubulusan Elementary School	8
20. Mayon Elementary School	9
21. Muladbucad Pequeno	10
22. Travesia Elementary School	18
23. Lower Binogsacan Elementary School	10
24. Barangay High School (Site I)	19
Subtotal	104
Ligao	
25. Ligao East Central School	18
26. Ligao West Central School	18
27. Tambo Elementary School	6
28. Binanoan Elementary School	7
Subtotal	49

**Table XIX 1.12 Allocation of Additional Evacuaton Unit/School During
Priority Project Implementation Stage (2/2)**

School	No.
Malilipot	
29. Malilipot Central School	30
30. San Jose Elementary School	27
31. San Francisco Elementary School	10
32. Binitayan Elementary School	10
33. San Isidro East Elementary School	11
34. Sano Roque Elementary School	11
35. Sta. Cruz Elementary School	12
Subtotal	111
Malinao	
36. Malinao Central School	16
37. Balading Elementary School	8
Subtotal	24
Sto. Domingo	
38. Sto. Domingo Central School	19
39. Sano Andres Elementary School	10
40. Sto. Domingo Municipal High School	10
Subtotal	39
Tabaco	
41. Tabaco National High School	36
42. Bantayan Elementary School	12
43. Quinastillohan Elementary School	12
44. Sano Andres Barangay High School	32
45. Panal Bangkiling Elementary School	25
46. San Antonio Elementary School	20
47. Baranghawon Elementary School	6
48. Matagbac Elementary School	6
49. Tabaco South Elementary School	6
50. Tagas Elementary School	6
Subtotal	161
Legazpi City	
51. Albay Central School	33
52. Gogon Elementary School	32
53. Bitano Elementary School	15
54. Bagumbayan Elementary School	12
55. Taysan Elmentary School	12
56. Cabangan Elementary School	12
Subtotal	116
TOTAL	775



Legend :

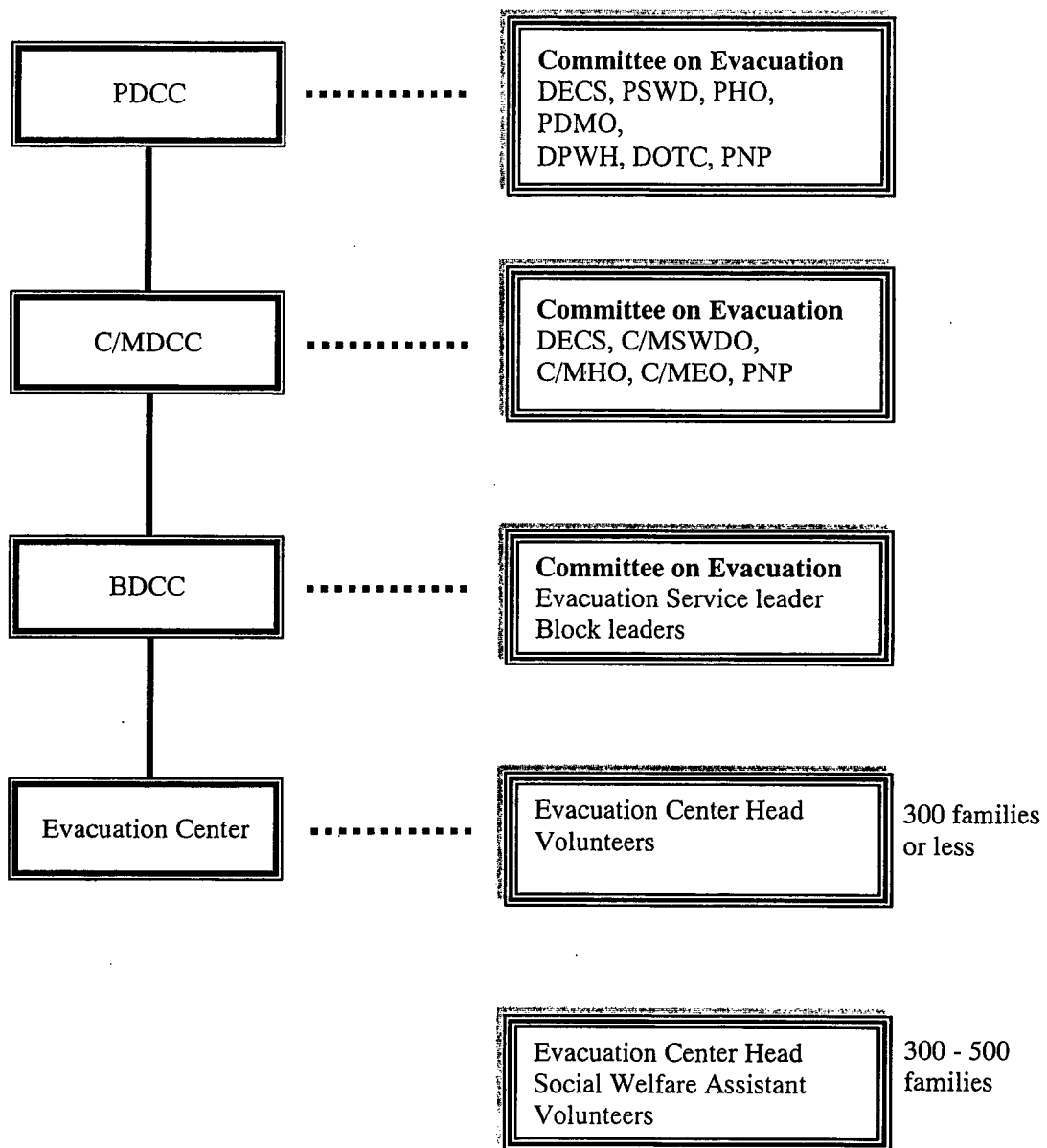
- ▶ Direct Communication & Action Flow
- ⋯▶ Media's General Information Flow

Source : PDMO

COMPREHENSIVE DISASTER PREVENTION
AROUND MAYON VOLCANO IN
THE REPUBLIC OF THE PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

Figure XIX 1.1
Evacuation Flowchart



Sources of Data : PDCC Disaster Management Operation Manual, 1998
 Barangay Disaster Manual, OCD, 1988
 Guidelines in the Management of Evacuation Centers During Disasters, DSWD

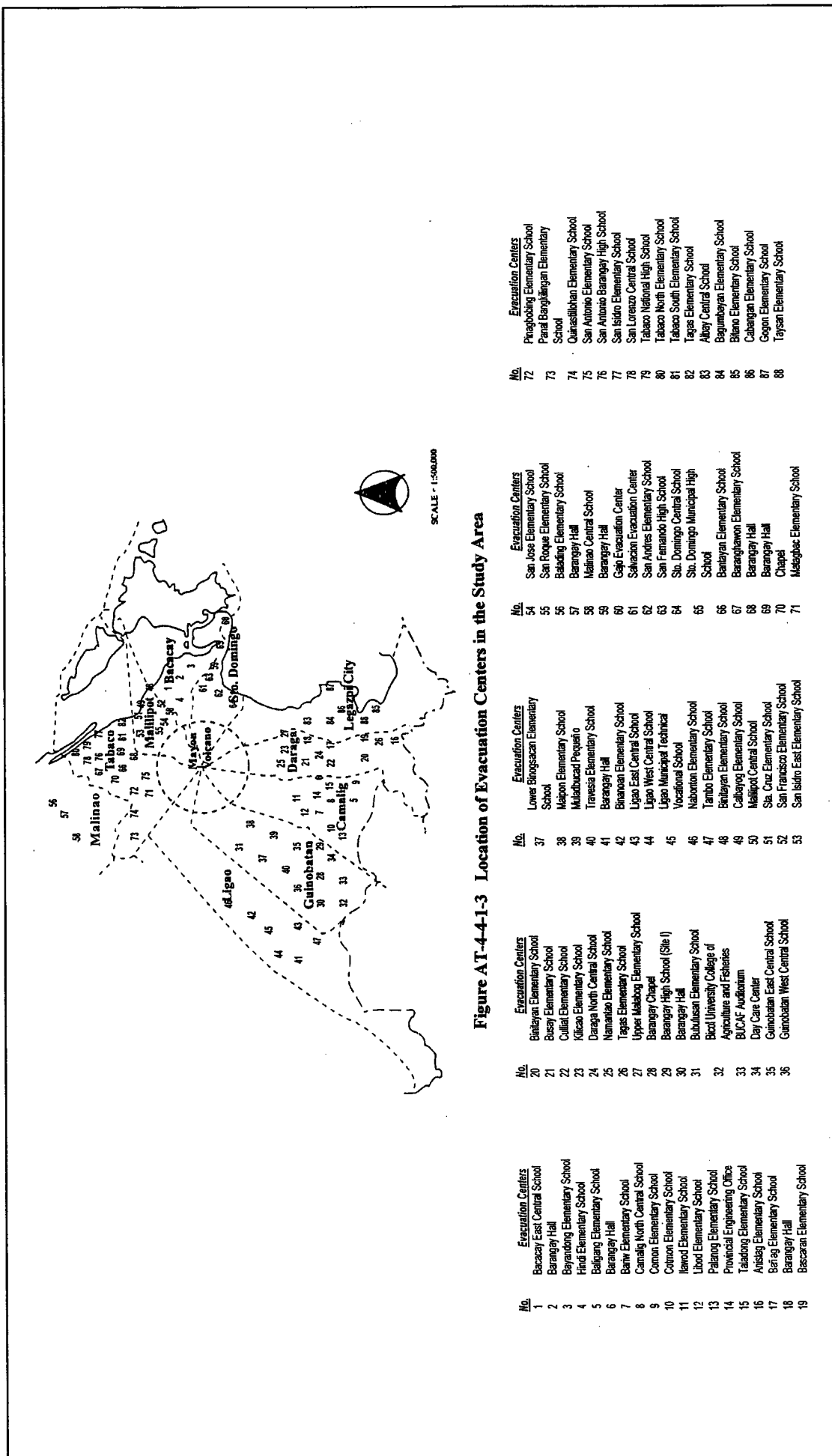
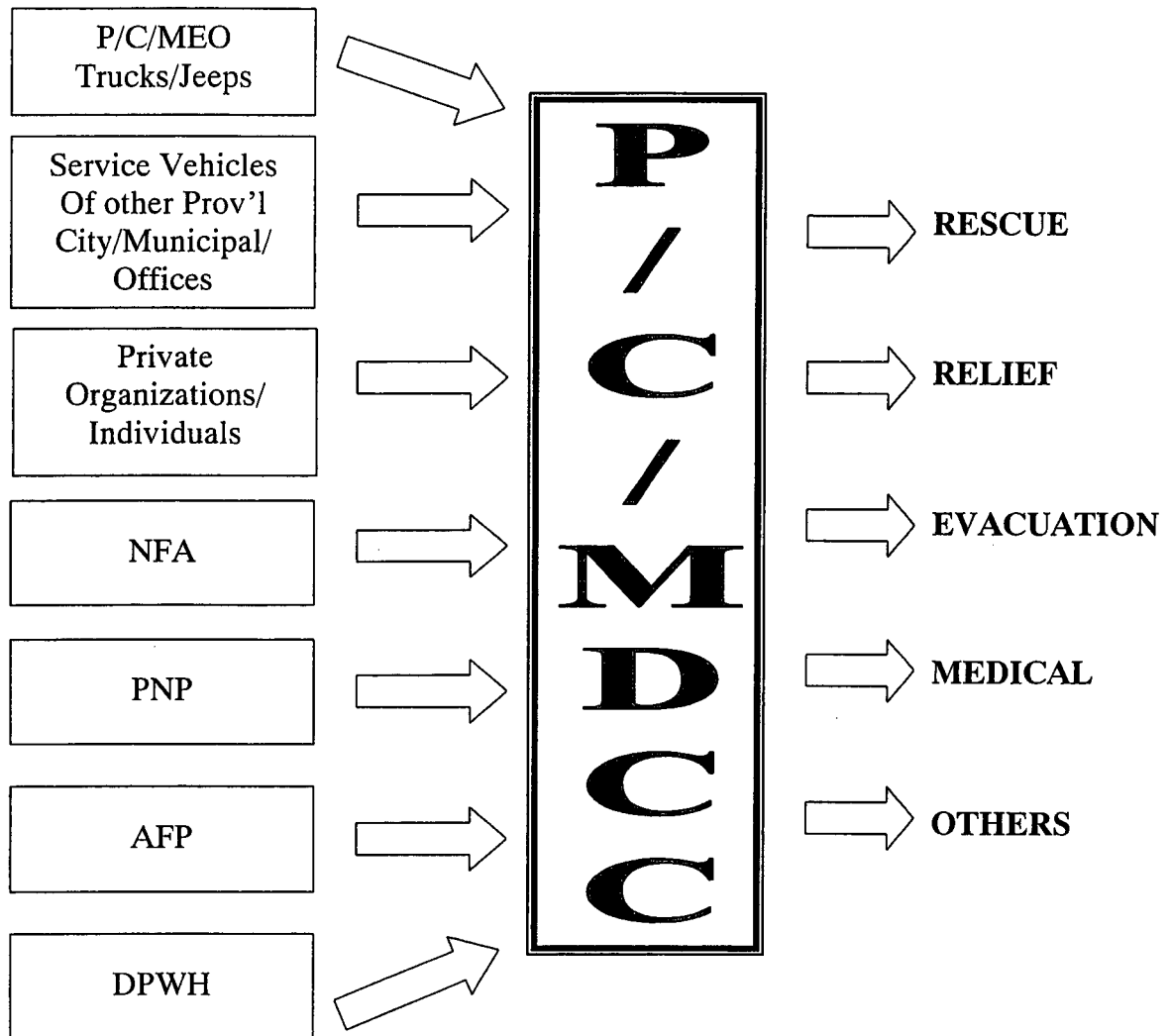


Figure AT-4-4-1-3 Location of Evacuation Centers in the Study Area

No.	Evacuation Centers	No.	Evacuation Centers	No.	Evacuation Centers	No.	Evacuation Centers
1	Beccley East Central School	20	Baitayan Elementary School	37	Lower Binogsaan Elementary School	54	San Jose Elementary School
2	Barangay Hall	21	Busey Elementary School	38	Malagon Elementary School	55	San Roque Elementary School
3	Bayandog Elementary School	22	Cullal Elementary School	39	Miladobad Pequeño	56	Bading Elementary School
4	Hadi Elementary School	23	Kilicoa Elementary School	40	Travesia Elementary School	57	Barangay Hall
5	Baligang Elementary School	24	Daraga North Central School	41	Barangay Hall	58	Malinao Central School
6	Barangay Hall	25	Nanantao Elementary School	42	Bhanon Elementary School	59	Barangay Hall
7	Bariw Elementary School	26	Tapas Elementary School	43	Ligo East Central School	60	Gapi Evacuation Center
8	Canalg North Central School	27	Upper Malabog Elementary School	44	Ligo West Central School	61	Salvacion Evacuation Center
9	Canon Elementary School	28	Barangay Chapel	45	Ligo Municipal Technical Vocational School	62	San Andres Elementary School
10	Common Elementary School	29	Barangay High School (Site I)	46	Nabontan Elementary School	63	San Fernando High School
11	Ilawod Elementary School	30	Bukulesan Elementary School	47	Tambo Elementary School	64	Sta. Domingo Central School
12	Lihod Elementary School	31	Rizal University College of Bukulesan	48	Baitayan Elementary School	65	Sta. Domingo Municipal High School
13	Palang Elementary School	32	Agriculture and Fisheries BUCAP Auditorium	49	Calbayog Elementary School	66	Baitayan Elementary School
14	Provincial Engineering Office	33	Day Care Center	50	Maligot Central School	67	Barangayon Elementary School
15	Taladong Elementary School	34	Gumbatan East Central School	51	Sta. Cruz Elementary School	68	Barangay Hall
16	Anisag Elementary School	35	Gumbatan West Central School	52	San Francisco Elementary School	69	Barangay Hall
17	Barag Elementary School	36	Baccraan Elementary School	53	San Isidro East Elementary School	70	Chapel
18	Barangay Hall					71	Madagac Elementary School
19	Baccraan Elementary School						
72	Pinagbobing Elementary School						
73	Parad Bayog/Baligan Elementary School						
74	Quinsalihan Elementary School						
75	San Antonio Elementary School						
76	San Antonio Barangay High School						
77	San Isidro Elementary School						
78	San Loretto Central School						
79	Tabaco National High School						
80	Tabaco North Elementary School						
81	Tabaco South Elementary School						
82	Tapas Elementary School						
83	Albey Central School						
84	Bagumbayan Elementary School						
85	Bilano Elementary School						
86	Cabangan Elementary School						
87	Bogon Elementary School						
88	Taysan Elementary School						

Figure XIX 1.3 Location of Evacuation Centers in the Study Area

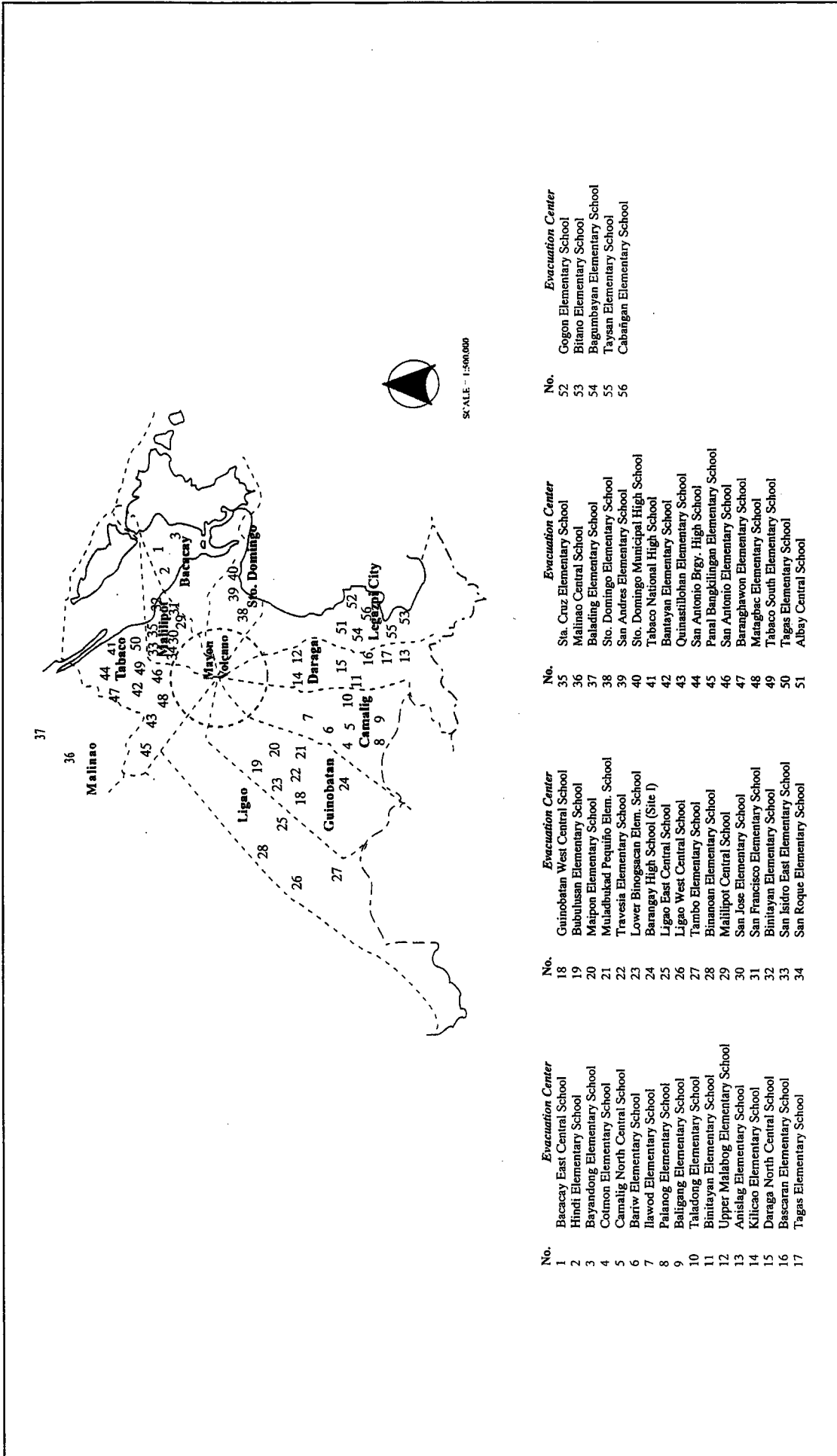
COMPREHENSIVE DISASTER PREVENTION AROUND MAYON VOLCANO IN THE REPUBLIC OF THE PHILIPPINES
 JAPAN INTERNATIONAL COOPERATION AGENCY



COMPREHENSIVE DISASTER PREVENTION
AROUND MAYON VOLCANO IN
THE REPUBLIC OF THE PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

Figure XIX 1.4
Transportation Mechanism



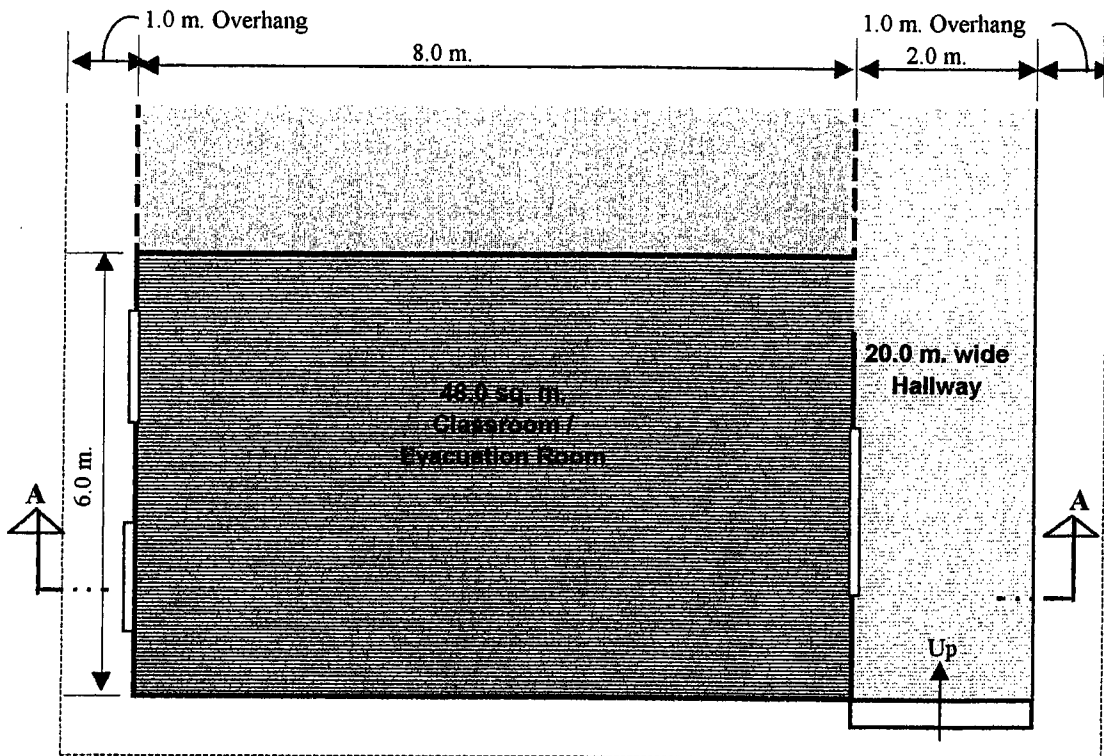
SCALE - 1:500,000

No.	Evacuation Center	No.	Evacuation Center	No.	Evacuation Center
1	Bacacay East Central School	18	Guinobatan West Central School	35	Sta. Cruz Elementary School
2	Hindi Elementary School	19	Bubulusan Elementary School	36	Malinao Central School
3	Bayandong Elementary School	20	Maipon Elementary School	37	Balading Elementary School
4	Cotmon Elementary School	21	Muladbukad Pequillo Elem. School	38	Sto. Domingo Elementary School
5	Camalig North Central School	22	Travesia Elementary School	39	San Andres Elementary School
6	Bariw Elementary School	23	Lower Binogsacan Elem. School	40	Sto. Domingo Municipal High School
7	Ilawod Elementary School	24	Barangay High School (Site I)	41	Tabaco National High School
8	Palanog Elementary School	25	Ligao East Central School	42	Bantayan Elementary School
9	Baligang Elementary School	26	Ligao West Central School	43	Quinastilohan Elementary School
10	Taladong Elementary School	27	Tambo Elementary School	44	San Antonio Brgy. High School
11	Binitayan Elementary School	28	Binanoan Elementary School	45	Paral Bangkilingan Elementary School
12	Upper Malabog Elementary School	29	Malilipot Central School	46	San Antonio Elementary School
13	Anislag Elementary School	30	San Jose Elementary School	47	Baranghawon Elementary School
14	Kilicao Elementary School	31	San Francisco Elementary School	48	Matagbac Elementary School
15	Daraga North Central School	32	Binitayan Elementary School	49	Tabaco South Elementary School
16	Bascaran Elementary School	33	San Isidro East Elementary School	50	Tagas Elementary School
17	Tagas Elementary School	34	San Roque Elementary School	51	Albay Central School
				52	Gogon Elementary School
				53	Bhiano Elementary School
				54	Bagumbayan Elementary School
				55	Taysan Elementary School
				56	Cabañgan Elementary School

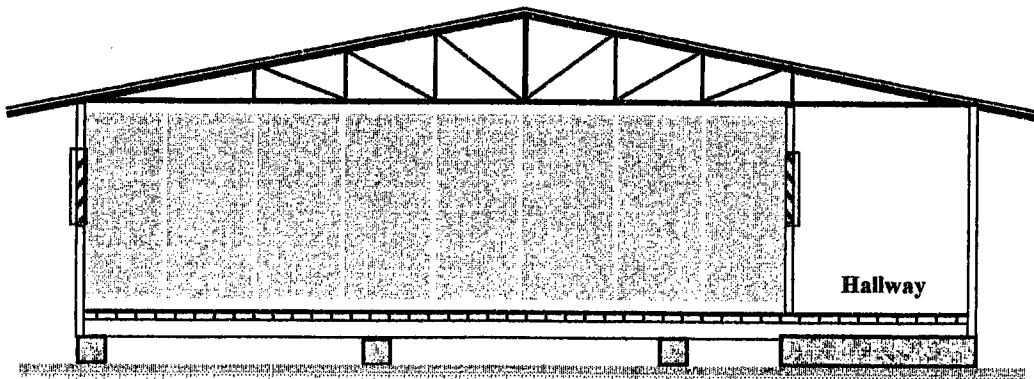
Figure XIX 1.5
Location Map of Planned Evacuation Centers

COMPREHENSIVE DISASTER PREVENTION AROUND MAYON VOLCANO IN THE REPUBLIC OF THE PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY



P L A N

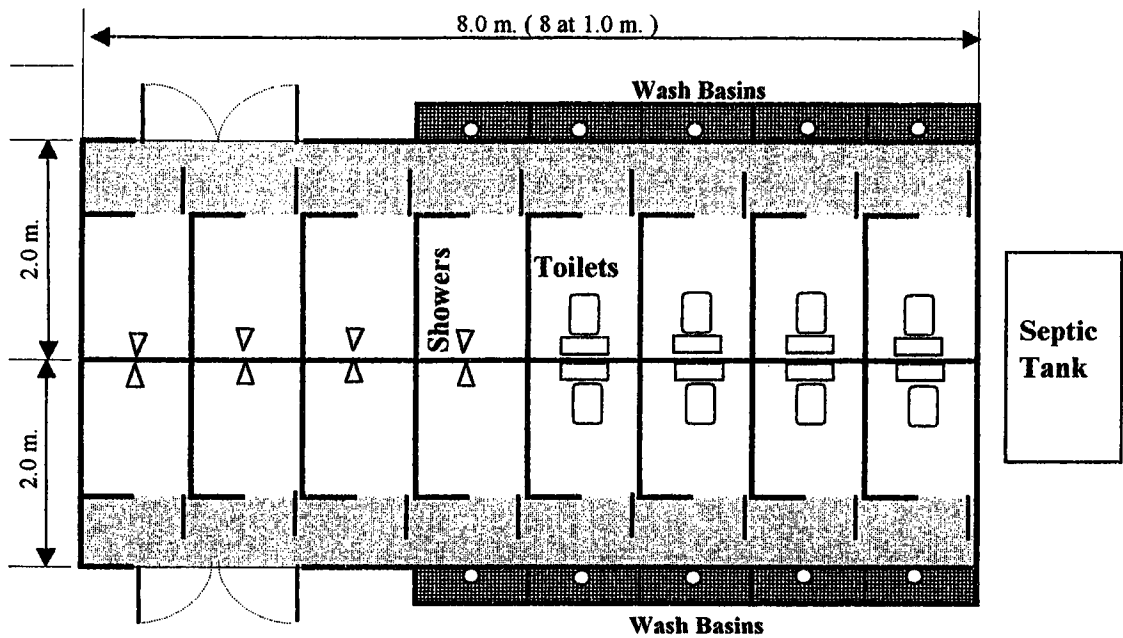


**CROSS-SECTION
(A-A SECTION)**

COMPREHENSIVE DISASTER PREVENTION
AROUND MAYON VOLCANO IN
THE REPUBLIC OF THE PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

**Figure XIX 1.6
Plan for Evacuation Center**

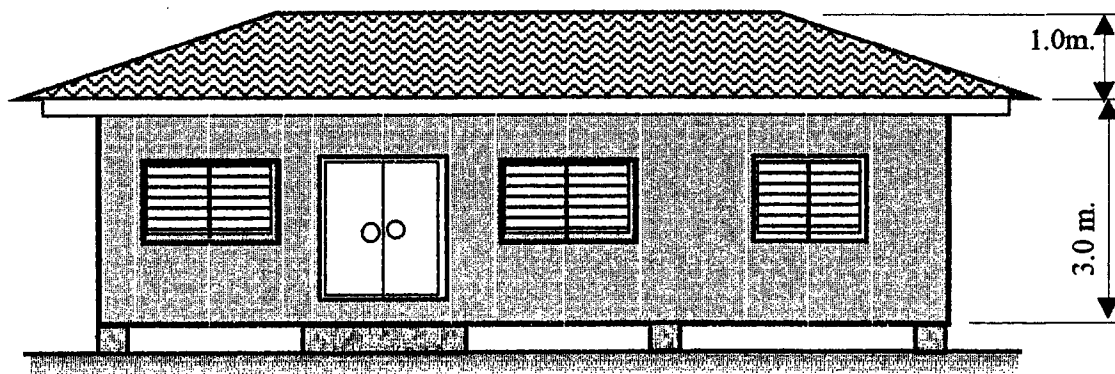
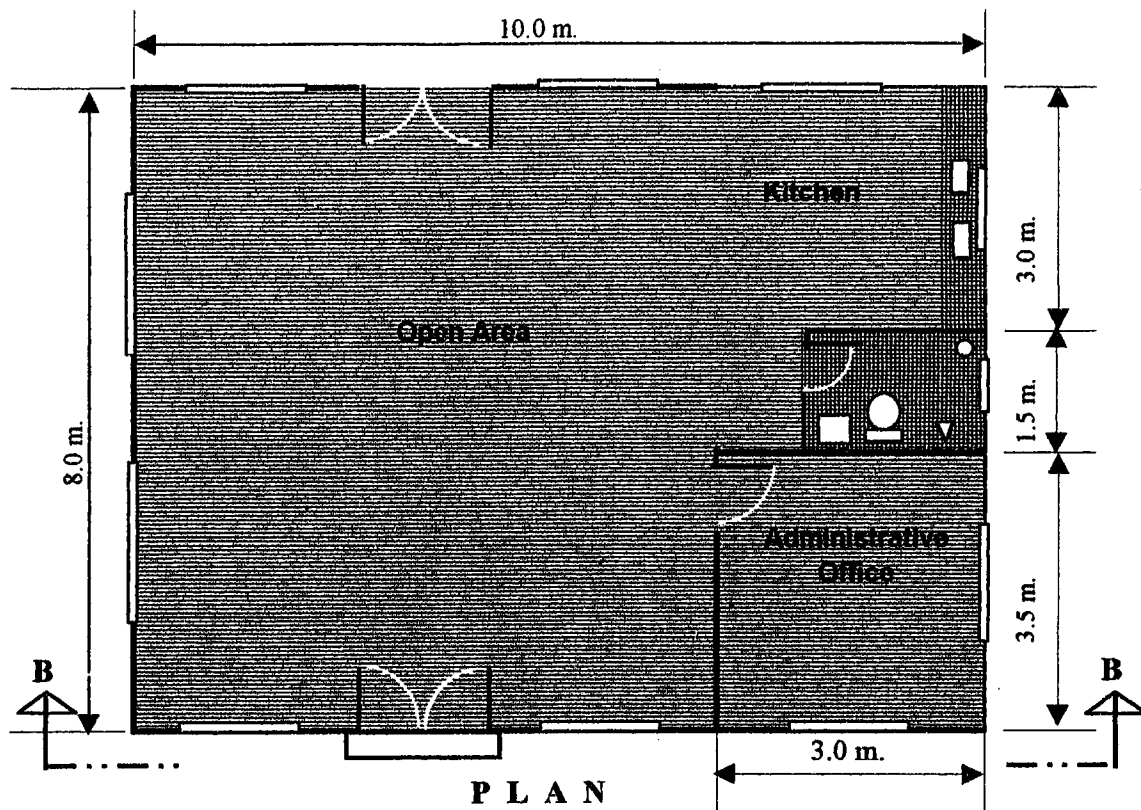


COMPREHENSIVE DISASTER PREVENTION
AROUND MAYON VOLCANO IN
THE REPUBLIC OF THE PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

Figure XIX 1.7
Evacuation Center

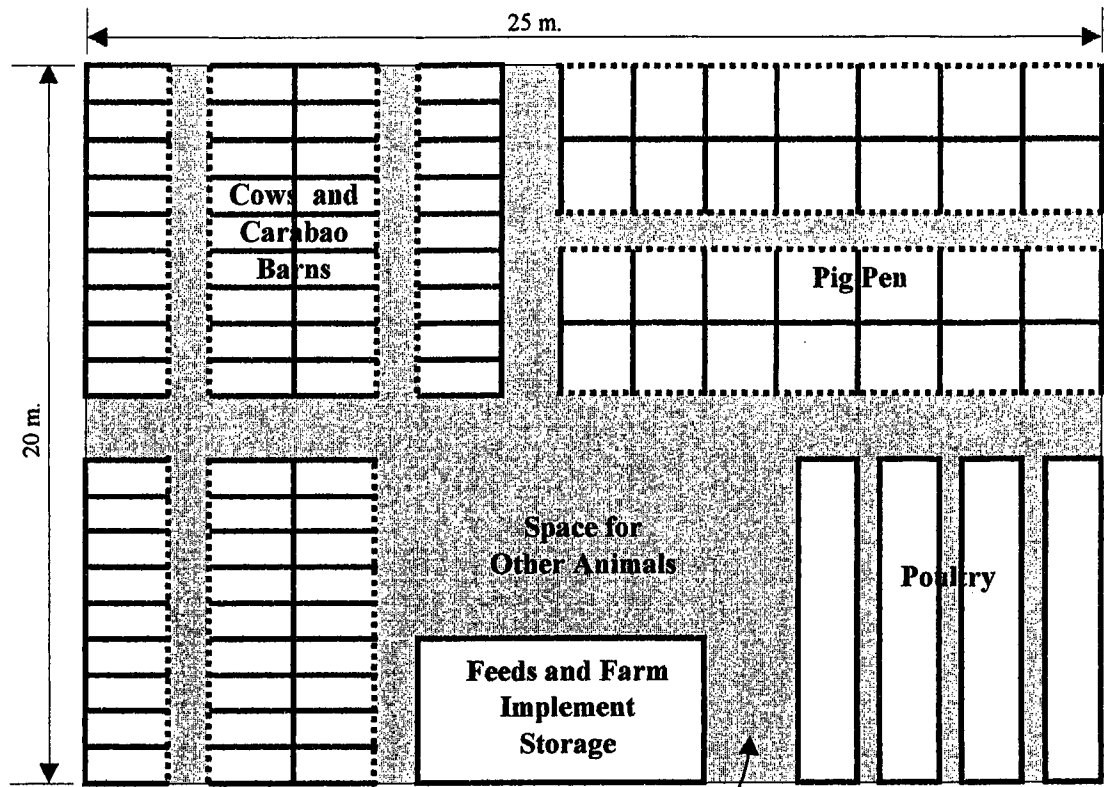
(Toilet, Shower and Faucet Layout)



COMPREHENSIVE DISASTER PREVENTION
AROUND MAYON VOLCANO IN
THE REPUBLIC OF THE PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

Figure XIX 1.8
Plan for Emergency Shelter



COMPREHENSIVE DISASTER PREVENTION
 AROUND MAYON VOLCANO IN
 THE REPUBLIC OF THE PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY

Figure XIX 1.9
 Livestock Sanctuary