Concept Paper

The current reports on the effects of Typhoon Yolanda (Haiyan) reveal staggering figures of casualties, missing persons, and destruction of farms, livelihood and domicile.

The world is seeing an unprecedented scale of devastation and human crisis wrought by a typhoon, that breaks disaster records in recent history. This had set off a global outpouring of relief assistance, and local contributions that are likewise unmatched in Philippine relief history.

**One month after the wave of relief work, the long and arduous work of rehabilitation begins. At this juncture, we open the door for technical volunteers and rehabilitation support to municipalities in the Philippine Visayas region devastated by Typhoon Yolanda.**

SIBAT is an appropriate technology organization that has the in-house capacity to do community-based efforts on production, water systems and renewable energy systems installation. But SIBAT, together with other organizations alone cannot accomplish this huge task. We call on our fellow scientists and technologists, and friends abroad to help us in the task of rebuilding lives, with the help of appropriate technology.

**Rehabilitation work will be done in phases, and will be planned along the context of agricultural resilience, disaster preparedness, and sustainable community development. Community or people’s organization in the task of rebuilding and disaster preparedness will be a crucial task. Mobilization of human resources and collaboration among institutions will be our key strategies. Appropriate and sustainable technologies – in food production, energy, water supply, and building structures will be studied and applied appropriately to needs and conditions.**

 **🙨 We call on technical volunteers to help us in accomplishing the urgent tasks of rehabilitating and rebuilding communities from devastation. We need to organize technical teams to do the following:**

1. Assess intensively the level of destruction and plan the rehabilitation work together with the afflicted communities;
2. Implement the **immediate phase** of installation of the appropriate systems for lighting & communication, water supply, and food production:
* Lighting for evacuation centers in affected sites in Visayas, giving priority to evacuation centers and sites where people have sought refuge
* Water supply systems for clusters of houses in all affected areas
* Vegetable food production and initial preparation for staple food crop production
1. Implement the **long-term phase** for rehabilitation and disaster-preparedness:
* Staple food crop production (rice and corn)
* Diversified food crop production and livelihood
* Hazard mapping in all areas (including geological hazards)
* Agro-forestry that will build protection of rivers, slopes and forests
* Rebuilding of mangrove areas to protect marine life and shorelines from storm surges
* Capacity building on rehabilitation and disaster-preparedness
1. Lend us a hand in **organizing communities** and building their resilience to confront the intensifying rage of storms and other extreme events.

**🙨 We call for all to help us with the following rehabilitation needs:**

**Total funds for initial target of 5 communities – US$ 161,625.50**

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|  | Components/Parts | Cost of Materials |
| 1. **Food production**
 | This will entail the building of communal farms and rebuilding of individual farms with priority to be given to vegetable gardens and preparation for staple crop (rice and corn) production. For one hectare of communally worked farm, the following will be required:1. *Farm* *tools*: the following implements will be required: 2 mini hand tractors, shredder1 , 10 shovels, 10 hoe and 10 harrow, and 10 bolos per 1 hectare of land (initial target is 1 hectare for each of the 5 communities)
2. *Seeds:* This will be sourced or contributed locally from organic farms
3. *Soil fertility management:* locally available materials will be used, starting from the debris materials

Technical teams to implement, including trainings.  ~ PhP 400,000 |
| 1. **Lighting**
2. Solar lighting for evacuation centers, streets, communities, settlements, etc.
3. Solar lamps for households with cellphone charging
4. Solar lighting for streetlights
 | The proposed system is a solar mini-grid system which will require training of community/evacuees to operate and maintain. One example is a solar minigrid for about 600 square meters of space occupied by some 150 households, will require a 2 kW solar lighting system to consist of the following components: 20 PV panels (@100wp), inverter, 6 batteries, battery charging controller, transmission line and posts, LED bulbs with receptacles and switch, solar frame.For individual solar lighting with phone charging, with the following components: PV panel, charger, battery, LED bulbs and receptacles (2#s including wirings).Another option will be solar lanterns with cell phone/battery charging functions for every household in the evacuation or resettlement sites. This system can be maintained and operated by individuals.For solar street lighting, we can propose a mobile solar street lights that are easily installed/dismantled by the community/evacuees.Technical teams to install and train local maintenance team. | ~ PhP440,000 ~PhP18,500~ From PhP900 to PhP7,000 |
| 1. **Water systems**
2. Solar powered water pumps for domestic and irrigation supply
3. Hydraulic ram pumps for water supply
4. Hybrid system
5. Gravity water system
 | For 150HH, a solar water pumping system will deliver water with the following components (will be adjusted depending on the head): 14 PV panels, approximately 1.4 kW pump, controller, tank, pipes and fittings, solar frame, wirings and communal tap stands.For 150 households, two units of hydraulic ram pump with the following parts: ram pumps, pipes and fittings, drive tank, storage tank, 30 communal tap stands.We can also build a hybrid system (ram pump and solar for parallel operation during sunny days) to omit other components on the system like storage tanks, piping and fittings. If the source is elevated relative to evacuation, resettlement or community site, we can design a gravity water system to omit the solar, water pumps and ram pumps.Technical teams to install and train local operators. | ~ PhP550,000~ PhP410,000 |
| 1. **Watershed and agroforestry**
 | This will entail the assessment and planning, building of nurseries, and implementation for the protection of rivers, slopes and forests.Technical teams to implement.  |