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# **Community Housing in Post Disaster Area on Nias islands, Indonesia: RESPONDING TO COMMUNITY NEEDS**

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## **Abstract**

**While the loss of life due to 26 December 2004 Tsunami was not so high on Nias islands compared to Aceh, the destruction of housing and communal buildings by the 28 March 2005 earthquake was widespread some are hidden in villages up on the mountainous areas. This situation has made housing provision for the earthquake victims difficult to implement. The contractor based approach did not work well on those areas. Unfinished contracts, disputes of beneficiaries and low construction quality have increased the cost of construction for the government agency for rehabilitation and reconstruction (BRR), and mostly hampered the community's access to better home and better living environment. To address such challenges the BRR introduced a community based housing provision through a pilot project located in 3 sub-districts located on the main island of Nias, North Sumatera.**

**Objective of the study is to learn from community involvement in providing their own settlements with basic needs for housing. The paper found that community satisfaction is important especially to housing beneficiaries. The beneficiaries of 144 households have completed their homes in 7 villages, spread in the 3 sub-districts.**

**This paper is based on a variety of observational strategies that will not only meet triangulation protocols but also a heightened understanding of particular communities' views on the general level of suitability of housing, and their level of participation in decision making. These lead to satisfactory of home ownership amongst beneficiaries.**

**The research contributes to housing policy in post emergency situation by way of engaging communities in the process that will lead to better targeted approach to satisfy the housing needs of the community while providing them with on hands knowledge of construction management and safe construction methods, and furthermore self esteem.**

**Keywords:** community involvement, housing in post disaster area, and safe construction

## Nias' issues and challenges

Nias islands are located along the west coast of Sumatera and part of the bigger provincial government of Sumatera Utara or North Sumatera. The main island, Nias, was subdivided into two districts in 2003. The northern part is *kabupaten* Nias or Nias district and the southern part is *kabupaten* Nias Selatan or South Nias. Social indicators ranked the two districts close to the bottom amongst other districts in the province and nationally. The GDPs of each *kabupaten* are Rp. 5.2 million in *kabupaten* Nias and Rp. 4.9 million in *kabupaten* South Nias. In average these are less than half of the Sumatera Utara province. In 2005 the province has a GDP of Rp. 11.1 million is less than the national average of Rp. 12.6 million. In 2004 income per capita in both districts is among the lowest in the North Sumatera province. To support the daily economy there are only four banks available in the major town centre of Gunungsitoli. In south Nias there is only one bank located in the town centre of Telukdalam.

Although rehabilitation and reconstruction have started since mid 2005 on the islands, of issues still challenged the success of the implementation. A list of issues and challenges was developed during the third Nias Islands Stakeholder Meeting (NISM 3) and recorded in the BRR<sup>1</sup> Nias' Action Plan (BRR, 2007). Among others, main issues are related to poverty and housing. Poverty is related to access to markets i.e. transportations that provide access from and to the islands as well as travels within the islands. In education sector the World Bank (2007) reports that results of education on Nias is among the worst in the North Sumatera province. Public health is also problematic and lacking behind the average in the province as well as nationally. Nutrition assessment for Aceh and Nias shows the case of severe and acute malnutrition in South Nias is the highest in comparison to all other districts in both provinces (Assefa, et al, 2006).

Prior to the disasters majority of houses was provided through self-help mechanism, but majority were individual based instead of developer or market oriented housing. Houses were built incrementally on communal land. The main characteristics of this method of provision are incremental construction, non-market orientation, self-built or hired labour, and financed from savings in advance (Rietmejer 1995). In urbanised area of Gunungsitoli most houses are concrete structure with brick wall and tin roof. In rural areas little are built on concrete and brick. Most houses are made of woods, or half brick wall with major construction relies on wood. Roof material was mostly made of palm leaves. In traditional villages where traditional houses are found, most new construction is in the back of the house utilised for cooking and pigs barn. In most remote settlements generally no adequate sanitation and access to clean water existed, despite the large number of springs and rivers.

Houses in remote villages have very limited access to skilled labour and modern building materials. The closer houses located to urban area the more concrete construction was found. Another important factor is affordability. Those who are living close or in the urban area usually are entrepreneur or working in government or trading businesses who can afford modern building material and skilled labour. After the major earthquake of 2005 one can easily witness that failure to construction is related to lack of knowledge on concrete based construction technique. This is true to most constructions developed

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<sup>1</sup> BRR is the Indonesia agency deployed by the Government of Indonesia in May 2005 for rehabilitation and reconstruction in Aceh and Nias after the devastated Tsunami 2004 and major earthquake 2005. BRR stands for *Badan Rehabilitasi dan Rekonstruksi*.

during and after 1980s in urbanised area such as in Gunungsitoli or in rural setting almost all failed to stand the earthquake.



Traditional houses in South Nias and Nias districts, and homes in urbanized area of Gunungsitoli (Photos H.Lang 2006 and 2008)

### **The 2004 tsunami & 2005 earthquake**

Between 1990 and 2003 Indonesia experienced the most costly destruction from natural disaster in Southeast Asia region. The most destruction was by the rain forest wildfire and the second is earthquake (Abarquez and Murshed, 2004). However these were topped off by the 2004 Tsunami and 2005 earthquakes that not only struck Indonesia, but also Sri Lanka, Thailand and several other countries in the Indian Ocean region have resulted in one of the worst natural disasters recorded in human history. In Indonesia, Aceh and Nias are the major areas worsened by the disasters. Another major earthquake struck Nias on 28 March 2005, caused smaller Tsunami in some areas on the main island and killed more than almost 900 people, damaged some 13,000 houses, and significantly changed the very physical layout of the island. Thousands of people were internally displaced and smaller number fled the islands.

While the loss of life due to the December 2004 Tsunami was not so high on Nias islands compared to Aceh, the destruction of housing and communal buildings by the following earthquakes, especially by the 28 March 2005 was widespread with most destruction in the urbanized areas of Gunungsitoli. Other than the major urban area of Gunungsitoli damages were not as visible as they were in Aceh. Damages caused by the earthquake struck large numbers of villages, but only a fraction of buildings collapsed in each village, but many were heavily and lightly damaged. These are scattered in remote settlements and those with limited access in the hidden poor villages, especially those on the mountainous remote areas on the islands. However, the challenge of covering large numbers of partially affected villages in very isolated areas is greater.

These disasters have brought international attention to the islands of Nias. More than 20 governments of 20 countries and 80 agencies, both nationals and internationals, have supported the reconstruction and rehabilitation process on the islands. Investment in housing provision is not less than Rp.580 billion or US\$.65 million until 2006 from both the government and non government agencies. The International Federation of Red Cross (IFRC) mobilised its resources through its implementing partners such as the Indonesian Red Cross, or international Non Government Organizations (NGOs) e.g. the Catholic Service Relief, Caritas Czech Republic, or the UN-Habitat. These NGOs, UN agencies and Red Crosses organized the supplies and assistance to communities in delivery and erection of temporary or transitional shelters. These temporary shelters were constructed for survivors of the disaster to replace the tents that they were living in while

waiting for their permanent houses to be constructed. Large scale procurement and finding legal or eco-labelled timber suppliers that meet the international standards have delayed shelter delivery to the survivors. Procurement started in late 2005 and deliveries took place only in April 2006 and implemented through the year. Although Nias received much smaller number in comparison to Aceh these units have provided effective shelters to many people of Nias especially those of renters in urbanized areas such as in Gunungsitoli and in Telukdalam.



Destruction by earthquake in the town centre of Gunungsioli (Photos: Unknown 2005), and by Tsunami in Idanogawo (Photo H.Lang, 2008).

While basic needs of the disasters' survivors during emergency phase have been fulfilled, the challenges to meet their next needs during reconstruction phase have grown accordingly. In general, human needs and priorities changes in times. A survey of poor communities in Nairobi found respondents put housing finance as the ninth priority (Pettie, 1979). Engels (1970) argued that the means of production should give sufficient amount of food and sufficient amount of healthy and roomy living space for the poor, but that 'food question' was more important than the 'housing question'. Although housing received lower priority, it still plays a very important role to satisfy minimum standard of living or essential basic needs such as food and clothing, and modern amenities such as medical care and education (Maslow, 1970). In post disaster areas needs and priorities changes over shorter period of time. Donors have dealt with this issue in many ways. The first response during emergency was providing tents to survivors as emergency shelters. Over time these emergency shelters continue with building barracks and temporary shelters. The needs of infrastructure have often been overseen, causing problems especially to the health of survivors living in emergency shelters. One difficulty during this stage was unavailable access to remote areas. Some households built their own shelter of remains from ruins of their house.



Temporary shelter built by the survivors in Bawogozali village, South Nias (Photos H.Lang 2006), and transitional shelter financed by IFRC (Photo B.I. Wibisono, 2007)

After the emergency period that lasts about 6 months the need for housing reconstruction begins. Compare to other development sectors in BRR projects infrastructure and housing reconstruction are among the most allocated resources and placed in the highest



priority. While infrastructure reconstruction developed for public purposes, housing is more of an individual good. However, the needs for both housing and infrastructure is enormous

To address the needs of housing and infrastructure the World Bank has up-scaled their program (Steinberg, 2007). This was implemented by adding housing component to its Kecamatan Development Project (KDP) that started in 1999 prior to the Tsunami and earthquake on the islands<sup>2</sup>. The up-scaled program was Kecamatan Rehabilitation and Reconstruction Program (KRRP) that adopted the community involvement principles<sup>3</sup>. However, lengthy community consultation in ownership and design issues caused delays. Construction only started towards the end of 2007. Similar experience happened to the 1000 rehabilitation and reconstruction housing project financed by the Asian Development Bank (ADB) in four villages in Telukdalam sub-district (Silas, 2008).

Other donors i.e. the Netherlands, French, and Spanish Red Crosses, and the Samaritan Purse, are those who utilised contractors for housing delivery. By utilising contractors cost and schedule could be minimised while quality could be ensured by close supervision. However, the challenge is the low capability of local contractors and supervision consultants. The BRR also utilized contractors for housing reconstruction during the early years of implementation.

## **Community Needs: whose project?**

Whilst the BRR and most of aid player utilised contractors in housing reconstruction, community-based recovery housing has been exercised in Aceh and Nias reconstruction by local and international organisations, virtually since the disaster struck on 26 December, 2004. Globally, as well as in Indonesia, experiences have shown that community-based recovery strategies under most circumstances involve more affected people in their own recovery, and are more likely to lead to sustainable solutions than top-down strategies can achieve (Waites, 2000, World Bank, 2006). These are because the increase of the communities' ownership to the project and as argued by John Turner in his work on housing the poor in Peru in the 1960s and 1970s (Turner and Fichter 1972; Turner 1976) that when homeowners are allowed to control the design, construction and management of their own houses, flexibility, self-sufficiency and community initiative make deficiencies and imperfections more tolerable to the dwellers. In general terms of resource mobilization, the community housing concept relies on the households securing and utilizing their own resources to lower the real cost of housing. Turner's (1976) model increases the real value of housing for the community, compared to the value of housing if built by the private sector.

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<sup>2</sup> The KDP provided communities in villages with immediate infrastructure and facilities in most *kecamatan*s, both in Nias and South Nias. The KDP aimed at building communities' strength to develop their own villages by integrating all relevant components such as access roads, water supply, drainage, sanitation, bridges, retaining walls, schools, community clinics, and village halls. In carrying out the task of housing and settlement reconstruction, the strategy generally used is integrated development that involved the greater majority of the communities, participatory mechanism in planning and implementation. These are aimed at enhancing local governance, promote a sound environmental and spatial planning, facilitate private sector participation, and help attain trustworthy governance.

<sup>3</sup> The aim was to provide around 5,000 houses to nine sub-districts, five in Nias and four in South Nias. The government of Indonesia through BRR financed part of the housing component while the Multi Donor Trust Fund's (MDTF) financed the other components i.e. schools and their equipments, village offices, and public infrastructure that is linked to the settlement reconstruction program. Based on the village maps, the project provided public access and drainage required by communities.

Academics have agreed there is rarely a blueprint on how to involve community in a project. However there are relevant principles methods and scenarios, which appears to be universally applicable for adaptation to different situations (Waites, 2000) and these are supported by applications in techniques of focused group discussions, citizen's jury, charades, and partnerships in planning and implementing projects (Barton, 2000). Different communities will have their own approaches to be adopted in community based projects. In practices in post disaster areas these approaches and techniques are applied (Davidson et.al, 2007, Steinberg, 2007). These show that housing construction is not an end but a mean to resettle communities and start a better life (Silas, 2008).

## **Community Involvement**

Having experienced with contractor based approach and its limitations, until 2007 the BRR Nias performed a more integrated approach to settlement development and provides communities with authority to manage most part of the project implementation. Towards the end of the 2007 fiscal year the BRR Nias has developed 144 houses as the pilot project of community driven housing development approach.

The most challenging issue with contractor based development is the limitation of the capability of the local housing contractors. This led to low quality houses and unsatisfied beneficiaries on the island. In June 2006, after almost one year of implementation the BRR recruited a team of 15 students to survey 219 houses in Gunungsitoli in 5 days. They found that out of the 219 houses constructed under various contracts of the BRR's housing project, 24 houses were still under construction even after the contracts expired. Although 195 units were claimed by the project manager and the contractors to be completed, the data shows that 184 houses were completely built and occupied, 5 houses were not occupied, and 6 were not found on the project sites. Further interview with respondents from the relevant project sites provided mixed opinion about strength or construction quality of the houses. However about 60% of the respondents were confident that the granted houses they occupied were better built than they had before.

An informal interview with a contractor on the field shows that out of about 500 contractors on the islands there are not more than 15 contractors who have sufficient capability to implement large contract. This is evident with contractors utilised by the BRR in 2005 – 2006. Many contracts failed to complete due to following factors.

1. Beneficiaries were not well identified on the field or in contracts.
2. Contracts were weak that the BRR failed to pursue the contractor's responsibilities.
3. Limited number and low capability of government's staff led to weak supervision during implementation
4. Supervision consultants are weak
5. Limited number of staff combined with limited supervisory skills has made the problem worse
6. Remote locations with limited access has made supervision even more difficult

In most developing countries, including in Indonesia, the construction of house is not a one shot activity and people keep making additions as to adapt them to their changing requirement and socio economic status. With home built contractors community will be difficult to make additions of their houses (Barenstein and Pittet, 2007). With these facts there were enough reasons for the housing provision policy on the island be shifted from

contractor based construction to community based construction. Under this approach community are enabled to reconstruct their houses themselves and the role of BRR is limited to the provision of financial and technical assistance.

Other than providing suitability and satisfaction in housing Waites (2000) added other important reasons for community involvement i.e. willingness for providing additional resources, increased communities' capacity in decision making, sense of togetherness, confidence, capability, and skill ability to cooperate. Furthermore design solutions more likely to be in tune with what is needed and what is wanted. The environment can more easily be constantly tuned and refined to cater the people's changing requirements. People want to be involved shaping their environment & mostly seem to enjoy it and therefore satisfied public demand. With community involvement people gain a better understanding of the options realistically available and are likely to start thinking positively rather than negatively. Time wasting conflict can be avoided and speedier development can be achieved. With these people feel more attached to an environment they have helped create. They will therefore manage and maintain it better, reducing likelihood of vandalism, neglect and subsequent need for costly replacement. In short: contributing to sustainability (Waites, 2000).

Other aspect contributing to sustainability is cultural issue. Although not as highly sensitive ritual matters as in India, local custom and tradition in home building play a major role in life on Nias islands (Barenstein and Pittet, 2007, Silas 2008). This mode of housing production i.e. involvement of community in housing provision has increased levels of satisfaction amongst beneficiaries. Perhaps the most quoted author in housing the poor during industrial revolution in Europe is Fredrick Engels. For Engels, the important thing was to understand all modes of production in any given country to answer the housing question (Engels, 1970). In this sense housing could be seen as a product. In community based housing scheme, the relevant community holds the ultimate decision making in the housing production. The following pilot projects implemented by the BRR on Nias islands will show that housing adequacy is a key to the satisfaction that beneficiaries feel a sense of achievement in home construction, safety, health, togetherness, and access to market and services are being provided at their own preference. Furthermore beneficiaries felt that their quality of life would be increased once housing and access roads were constructed in poor and remote communities. The project referred the Sphere Project standards (2004) in participation, and shelter and settlement.

## **The Pilot Projects**

### **The Process**

#### *Project preparation*

Under the community development project, the government recruited individual community facilitators with two different backgrounds. First are engineers or those with technical background to assist beneficiaries in designing, building or supervising the builders' works. Second are those with social or non-technical background to work with the community and facilitating in community meetings. During the preparation phase the both kinds of facilitator were responsible to socialize and explain how the project will be

prepared and implemented in community meetings in the village. The facilitators also worked in selecting and training of community cadres, formation of the community groups, and election of coordinator for the community groups.



Preparation process of community involvement (Photos & Diagram B.I. Wibisono and T.N. Samadhi)

Next step was data collecting where facilitators worked together with communities to go around the village. Afterwards the facilitators verified the collected data with the presence of the community, and selected the most eligible households to receive assistance based on level of damage to their homes<sup>4</sup>. Another community meeting was later convened to receive public endorsement and final clarification from the village. Upon the village's agreement a list of beneficiary groups were then materialized. This was followed by trainings about community planning, housing design and basic principles about technical construction, earthquake proof construction, field supervision, and book keeping. Then they moved into the construction phase. For easy identification of the owner of the house in later days, all members of the community groups were photographed in front of their damaged houses.

Several beneficiary groups were then organised under a group and from this group a team of management was established aiming at better cooperation amongst the beneficiaries to structuralise and accelerate the construction process. Members of the management team were elected by the community and named as the Committee for Acceleration of Housing and Infrastructure Reconstruction. In one village there could be several committees or only one committee depending on the number of beneficiaries to be served. Each committee manages a community account and responsible for book

<sup>4</sup> Homes with heavy damage and unsafe for living will be granted a new house and those with light and medium damages were nominated to receive rehabilitation funds. However until the project completed funding for rehabilitation grant has not been approved.



keeping, monitoring and reporting. The committee also mediate when problems occur amongst beneficiaries or communities.

Other than the committee some villagers were selected and assigned as community cadres. The purpose was to mediate in knowledge transfer from government officials, experts, and facilitators to the villagers. These community cadres learned from first hand transfer of information during implementation of the project. This “learning by doing” approach has been a new experience for the community. Several visits to the field and communications with several cadres have shown satisfying results that they had learned the principles of constructing earthquake resistant structure, usage of various materials for construction, book keeping, and reporting and other relevant knowledge in housing project.

With the assistance from the facilitators and engineers the community groups have made proposals of the funding usage. Each proposal enabled the community to draw a down payment of 55% of the project cost. With this money the community can look for and engage suppliers for building materials, as well as builders and helpers from the nearby villages if not from their own village. The money was channelled through each community group account consisting 10 households. Usually each household engage 1 builder and 1 helper. In most cases the team was assisted by other unpaid helpers from the family or relatives.

### *Construction Process*

The preparation process was assisted by facilitators recruited by the BRR. This includes site preparation, administrative forms preparation, and safe and efficient construction methods for substructure, main structure and superstructure. Other detailed structural trainings were also conducted onsite to correct the existing construction practices on the island, e.g. how to bend iron for bracings in a concrete column and beam, spacing between bracings, special rigid joints, ratio between sand, cement and gravels in concrete mixture and other relevant techniques. The facilitators also mediate in problem solving such as assisting the community groups to work together to hand carry materials from the main road to remote housing sites with low accessibility or redesigning the housing plan, details and use of materials, etc. During construction stage the facilitators played the role of supervisor and inspector in house construction. Writing short and concise biweekly reports was also another assistance provided by the facilitators. The report includes financial reports and book keeping as well as photographs that records construction progress.

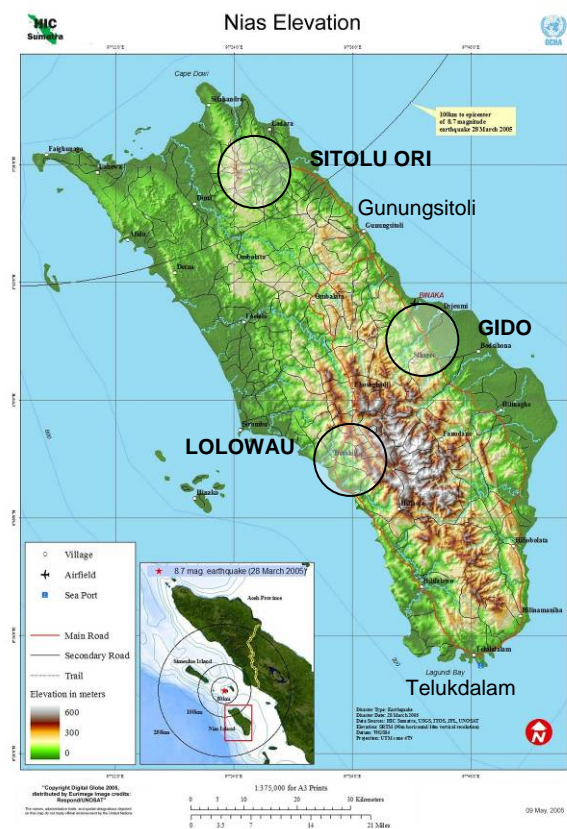
For construction materials the facilitators encouraged and taught the community group to control the building material delivery and use. The facilitators introduced a log book to be filled by the community and distributed to the households according to their needs. During implementation the groups were taught how to evaluate quality of materials, strength of structure, and relevant details of construction.

Financial management was supervised by the facilitators. The first instalment to each community group’s account was withdrawn in the amount according to each proposal’s term of payment prepared by the community. To control the use of funds, three signatures were required, one from the head of the community group, one from the treasurer of the group and counter signed by a facilitator. For book keeping each household has to provide receipts for each of their purchase or payment to the workers.

The facilitators also assisted the community groups to convene meetings as required when problems aroused. Problems were discussed and results of discussions were put in minutes of meeting. All reports and data were collected and gathered to make a progress report for the project manager and other concerned management in the BRR office.

Following the preparation three pilot projects were selected based on the effort in trying to develop models that represent geographical areas of the project. Other indicator is that the locations have not received assistance from any donor. However, the three locations chosen have similar village setting and strong cohesiveness of community. The locations are located in the sub-districts (*kecamatan*) of Gido, Lolowau, and Sitolu Ori. Based on reports provided, starting from preparation, implementation and financial reports, each of the locations was visited at the finalization phase. Observations and interviews were conducted to residents, builders and heads of the villages yield the following results.

## The Sub-projects



Map of Nias islands (UNOCHA, 2005)

### Gido

The sub-district of Gido is one of 33 sub-districts in Nias district. The major provincial road that connects the two major town centres of Gunungsitoli and Telukdalam cuts across the village. A total of almost 32% of the area is rice field with limited irrigation system. Despite of all its limitation the district is one of the major rice production sub-districts on the islands. With almost 270 days of rain annually most paddy field on the islands receives water from the rain. Two villages were selected during the first community consultation with the head of the sub-district. They are Hilibadalu and Tuhembuasi villages.

In Hilibadalu where 50% of the area is agricultural land, 16 household were chosen to be the first beneficiaries of the first batch of the construction that started in March 2007. The second batch started in September 2007 with 14 units being developed. In parallel, the next door village of Tuhembuasi started with 17 households as the first batch beneficiaries of the project, plus another 26 households for the second batch.

Proximity to the urbanized area of Gunungsitoli has provided the community in both villages access to somewhat high quality building materials and skilled labours. These were reflected on the good quality of finishing, relatively quicker building construction and willingness to contribute funds to construction. In contrast to contractor oriented development, flexibility of financial scheme in this project has allowed the community to exercise their perception of a 'home'. Accessories, ornaments, and even additional room were found in their homes. Unstructured interviews with beneficiaries revealed high satisfaction on the results of the project. Several issues that indicate sense of satisfaction aroused from the interviews are as follows.

In community meetings facilitators provided beneficiaries with opportunities to contribute to decision making in project management, construction and design. Although there are efforts from some villagers to manipulate beneficiaries data and make use of the situation to get houses but these were eliminated by exercising firm and single interpretation of criteria of beneficiaries, and 'clean' (free from bribery) process. These have increased sense of ownership of the project. Additionally, the facilitators introduced a transparent process that increased level of satisfaction amongst beneficiaries.

Resources i.e. human resources and financial resources were added by the beneficiaries. With the additional funds, the total allocation exceeds the budget ceiling to achieve the desired home. These strengthened the argument that sense of ownership is important and had increased level of satisfaction amongst beneficiaries.

Knowledge about safe building construction has increased confidence, capability skills, and ability of the beneficiaries. This is a different kind of satisfaction to community cadres and home owners that their knowledge widened and skills improved.

Sense of ownership of the project was built since the beginning of the project by convening in community consultation and meetings about design and construction management.

The above strengthened Turner and Fichter (1972) and Turner (1976) that if communities were provided with power to control over their housing process it would likely yield a more sustainable achievement.



A house in Gido (Photo H.Lang 2008) Road before construction in Lolowau, and a house under construction also in Lolowau (Photos B.I. Wibisono)

## *Lolowau*

The sub-district of Lolowau is located on South Nias district. Part of the district faces the Indian Ocean and another part is inland, laid on the low mountainous area (a little less than 700m above sea level). Most landscape matrix are of shifting cultivation land with a variety of perennial tree species and other agricultural crops, mixed with agro-forestry systems and interspersed with secondary forests. Some of the area is rice field with limited irrigation system. However, most of the population in the villages collects their income from small estate rubber grown intermixed with other tree crops and annual crops. Other than extracting rubber the community receives secondary income from selling daily needs. Other than housing project, the project also covered almost 2 km of access road. In this sub-district four villages were selected to take part of the pilot project of community based housing, they are Soroma'asi, Lauso, Sisobahili Huruna, and Bawohesi villages.

The process of 80 housing unit provision in the four villages in Lolowau is similar to the other two villages. However, contrary to the villages in sub-district Gido, the villages in Lolowau are far from the main urban area of Gunungsitoli and Telukdalam. It was difficult to find skilful builders and to find good building materials at reasonable cost. Therefore if one compare house finishing and ability of households to add rooms or decorative elements or accessories, in this area the capability is lower than in Gido.

As expressed by the villagers access is a problem. This has led to higher poverty rate in the area and above all hampered development. To reach the villages from Telukdalam (the major urbanized area in South Nias) or from Gunungsitoli (the major urbanized area of Nias) one has to travel approximately 2.5 hours in an off-road vehicle through a very poor condition of 50 and 60 km of provincial road. Heavy rainfall has made the low quality of road ruined in a very short time. The transport cost has made prices at their highest on this part of the island. On the other hand crops are difficult to transport to the market in both Telukdalam and Gunungsitoli or further to even bigger markets across the island.

With the intention to contribute to alleviate villagers from problems of access and poverty a component of village road was proposed by the villagers. The proposed road was 1.8 km that was able to connect housing settlements and the villagers' crops estate to the nearby traditional market and the main provincial road. The road construction costs Rp.850 million. With this newly constructed road, other than Soroma'asi, two surrounding villages, Louse and Sisobahili Huruna, benefited from the ease of transportation crops, and people walking or on vehicles to the main road, school, clinic or other destinations. Due to insufficiency of heavy equipment to construct a road, the community decided to work with the district army (*Kodim* 0213) under a contract agreement with the relevant communities from the three villages. This seems to be odd as the villagers are also the workers on the road project.

Villagers in remote area have always been afraid of the military and felt that they have little confidence to deal with them. This psychological burden was difficult to overcome. By facilitating communities in working together with the army the community learned how to make use the capacity of the military to work in remote or difficult locations. The community also satisfied that they learned how to negotiate with the army.

Similar to the case in Gido, some village figures tried to be the ones who bridge communication between the BRR and the beneficiaries, in fact they tried to manipulate the community's opinion therefore hamper participation to happen. However, with strong facilitation to foster transparency, accountability and cooperation from the facilitators,



participation could happen in this sub-project. These are in line with Maslow (1970) pyramid of hierarchy of needs that increase in time from basic needs to self actualisation i.e. community's self esteem in dealing with the Army.

If one carefully observed the home finishing is not as good as those in Gido. One example is the painting work on windows that was not tidy. A facilitator explained how frustrated the owner of the house when he painted his house that the paint kept dripping and difficult it was to keep away the brush off the window glass. When owners understand how difficult it is only to paint the window panes they appreciated the works of the builders better and proud of the efforts that they have made for their own homes. Even the finishing was not good to our standard the community accept the deficiencies and imperfection (Turner, 1976) with satisfaction they were very proud to say that their home is beautiful.



A finished house in Lolowau, road after construction in Lolowau (Photos B.I. Wibisono 2007), and a house in Situlu Ori (Photo H.Lang 2008)

### *Sitolu Ori*

The sub-district of Sitolu Ori is located in the northern part of Nias district. Majority of the area is inland, low mountainous, with a river flowing on the southeast part of the sub-district. Only a very small portion on the east side of the sub-district touches the sea. Main crops on the island is cocoa and rubber estates, with mixtures of coconut, fruit trees, and mixed in with secondary growth forest, making it difficult to define and measure 'estate crop areas' versus 'forest'. The selected area is Botombawo village.

In Botombawo, 30 households were chosen to be beneficiaries of this program. Access is also a problem to the village. About 1 km of road leading to the beneficiaries' settlement was only accessible by off-road vehicles. One beneficiary was located where there is no road could access the house. All of the building materials were hand carried to the project site. Interviews with the community and the builder revealed that they save money by utilizing woods from their own forest. With this they were able to purchase ceramic tiles which are not in the design of the houses. Sense of community was felt strong when two beneficiaries told the story that they contributed to their neighbour's house construction and each house was developed with 4 – 7 persons.

The experience of facilitators in Botombawo shows satisfactory result when during a discussion the community was proud to say that their knowledge in building a house was increased. For example now they know that an anchor, distance and size of bracing, thickness of steel bars used for concrete columns and bars play an important role to guarantee the strength of a building. The community also learned how to perform a simple tender to get the best result with reasonable price of builders. The community also learned how to convene meetings with related stakeholders such as the village leaders,



community figures, and the technical team. The existence of the technical team is important as they have to do inventory of the purchase of building materials as well as ensure the structural quality of houses.

However, the length of construction period was very much influenced by the phases in building construction. There are dates believed to be 'good dates' to start constructing each dates of a house. The important phases are: start to lay down the first stone for foundation, start to pour concrete for the first column, putting the top beam of the roof truss, and the start of covering the roof. These important dates are 8 or 12 days before full moon when the days are cool. An important housing element that needs to be carefully selected is the top beam of the truss. A particular wood called 'boli' has to be used or at least inserted as part of the beam. All of these rituals caused one or two months longer than if constructions were built by a large contractor. In this village, in average, to complete one house the community requires 5 months at the fastest.

These cultural issues have also been encountered in other experiences (Barenstien, 2007, Silas, 2008). Other than that a mutual learning process happened in the project as the facilitators also learned local wisdoms to be patient in constructing a house with the community, i.e. not to cut younger trees from the forest, and wait until afternoon to cut the trees for building material.

## **Lessons learned**

From the experiences gathered from the pilot project implementation there are important issues to be learned as follows.

1. Community needs often misinterpreted. This has always been the case when donors go out to the community with a ready made program, based on their own analysis. A preparation phase of a project should include social and holistic approach of traditions and behaviours. This approach focuses on the major role played by the community. The aim is reinforcing the existing social institutions to support the idea that development is initiated, and managed by the people. One needs to be alert of villagers or outsiders who would manipulate data of beneficiaries for their own personal benefit.
2. Housing is a private good. This nature of private property has a positive impact that it increased beneficiary's willingness to invest more into their own housing construction. The case is different with public goods implementation such as in Lolowau experience. In Lolowau level of satisfaction was added by self actualisation of he community groups.
3. Effective Coordination is the key, important issues to be emphasized are common view and rehabilitation objectives that have to be agreed upon on the field, including a clarification of short, medium and long-term action plans. In the case of road construction in Lolowau, the strong needs amongst villagers has triggered cohesiveness amongst villagers to work together built the road and worked with the Army. To create a supportive rehabilitation and reconstruction atmosphere the resettlement and housing reconstruction focus on public involvement, as much as possible. The project has shown that facilitation is a key to the success of community based development.

4. The opportunity to determine the required assistance by the communities has not been exercised in the projects. The form of technical assistance often was determined by the government. This has affected the flow of project implementation. For example if there was an assistance and a process of developing strategic plan together with the survivors of the disaster perhaps these projects could yield a more comprehensive approach i.e. integrating water and sanitation, access pathways, and livelihood component to address poverty.

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## Author's Biography

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The author has the qualifications of an architect, urban planner, and housing expert. He holds a master degree in city planning from the University of California at Berkeley, USA and a postgraduate certificate from the Institute for Urban and Housing Studies, the Netherlands. Heracles has worked for the Ministry of Public Works of the Republic of Indonesia since 1988. As a government official in the Ministry, he has been involved extensively in various foreign aid projects, working with international consultants and experts from the World Bank, the Asian Development Bank and other country donors involved in urban and infrastructure development in Indonesia. He was the deputy project coordinator for capacity building project in urban infrastructure development for government officials held in Indonesia and abroad sponsored by the Asian Development Bank. He was also involved with the Indonesia Australia Specialised Training Project sponsored by the AusAID and preparation of housing needs assessment and design for Tsunami and earthquake survivors in Aceh and Nias islands in Indonesia. His last experience includes the position of Director of South Nias District in the BRR. His research interests are in housing for the poor, institutional capacity building, urban poverty alleviation, community development, and other subjects related to urban planning and development.