

**Evaluation Report**

**Name of the project**

**Indigenous community-based sustainable management of Chimbuk Hill  
forest in Bandarban hill district**

**Implementing entity**

**Humanitarian Foundation**



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## **Executive summary**

Deforestation in the developing countries is regarded as a serious concern because of its resulting biodiversity loss, soil degradation and significant contribution to global climate change. Slowing down the deforestation and forest degradation and thereby restoring and conserving the forest ecosystems have been successfully achieved by the local community participation and management in many tropical countries. The Arannayk Foundation supported the project entitled “Indigenous community based sustainable management of Chimbuk Hill forest in Bandarban hill district” implemented by the Humanitarian Foundation to restore and conserve the sub-tropical mixed evergreen forest ecosystem in the Chimbuk Belt of Bandarban district. The project has been running from June 2009 through May 2012. To measure the activities and impacts of the project, an evaluation activity was finished on December, 2011. The evaluation incorporated reviewing the project documents, annual progress reports and/or draft project completion report; visiting the project sites and discussing with the project staff, project participants, community leaders and other stakeholders; reviewing the achievement of the projects against the set objectives, both from the written report and field observations. To restore the degraded forest resources and conserve the forest ecosystems, the present project was undertaken with the following specific objectives; (a) To select the indigenous communities having the traditional capacity and organization to participate in community based conservation of the landscape and forest resources in the Chimbuk Belt; (b) To restore the forest resources in the selected indigenous communities and (c) To develop an institutional mechanism for conservation and sustainability of the community forest. The impacts of the project show a good potential of sustainability of the capacity achieved by this project. However, the good health of the corresponding village common forests is dependent on some important factors, e.g., sustainability of the institutional support, activities altering the economic behavior of the participant, activities enforcing the conservation wisdom of the participants, etc. So, sustainability of restoring and conserving the VCF depends on at least the above factors. It is difficult to conclude how long the institutional support will be needed to make the changes permanent. However, it is recommended to extend the project at least one more term. To make the restoration and conservation activities sustainable, the evaluator thinks that Reducing Emissions from Deforestation and forest Degradation, conserving and enhancing forest carbon stocks, and sustainable managing of forests (REDD+) activities will have a good potential in the project sites. To introduce this activity, baseline carbon measurement will be necessary in the corresponding VCFs. The present report is critical to the decision makers of the Arannayk Foundation whether to extend the project or not. However, it is a good to measure the community based nature conservation intervention.

## **Introduction**

Deforestation in the developing countries is a serious concern because of its resulting biodiversity loss, soil degradation and significant contribution to global climate change (Ehrhardt-Martinez et al. 2002). It also hampers the livelihood and cultural integrity especially of the indigenous communities (Culas 2007). Community-based forest management is broadly considered as a principal strategy in nature conservation (Mannigel 2008). It becomes effective when appropriate incentives are offered to and roles are clearly defined to the participation (Sawhney et al. 2007).

Bangladesh has been experiencing severe deforestation and forest degradation over the last 3 to 4 decades. During the period 2000-2005, the annual rate of deforestation in Bangladesh was 0.3% (2000 ha) as stated by FAO (FAO 2007). In the meantime, many plants and animals have become extinct or endangered in Bangladesh (Chowdhury et al. 2009). A total of 40 inland mammals, 41 birds, 58 reptiles, 8 amphibians and 106 vascular plant species have reached at-risk status in varying magnitudes (IUCN 2000; Khan et al. 2001). The hilly areas of Chittagong, the Chittagong Hill Tracts, Cox's Bazar and the Sylhet Forest divisions consist of hill forests, which are subject to severe degradation due to overpopulation, shifting cultivation and extension of agriculture (Salam et al. 1999) coupled with encroachment by settlers, poverty and lack of awareness (HF 2011). Chimbuk Hills in the Bandarban district is an important biodiversity hotspot covering the tropical wet mixed forest ecosystem. The rich diversity in flora and fauna in the Chimbuk Belt developed a unique forest ecosystem with numerous numbers of fountains and streams provided a nature dependent livelihood of the indigenous communities (HF 2011). Before 3 to 4 decades, this area had a dense evergreen forest harboring innumerable biodiversity. The indigenous communities living inside this forest are Mro, Khumi and Bawm.

The richness of floral diversity in the mountainous region creates the drinking water source through numerous fountains and streams (Paoli et al. 2010). The present decrease of the floral diversity in the Chimbuk Belt made a serious threat to the indigenous communities for their water source along with other forest ecosystems (HF 2011). The local anthropogenic causes to deforestation along with the global effect of warming have made this situation worse off for 20000 inhabitants in the Chimbuk Belt.

With the goal of restoring and conservation of the forest resources in the Chimbuk Belt of Bandarban district of Bangladesh, the Humanitarian Foundation (HM) supported by the Arannayk Foundation had an intervention project entitled "Indigenous community based sustainable management of Chimbuk hill forest" during the period June 2009 to May 2012. To measure the activities and impacts of the project, an evaluation activity was finished on December, 2011. The evaluation incorporated reviewing the project documents, annual progress reports and/or draft project completion report; visiting the project sites and discussing with the project staff, project participants, community leaders and other stakeholders; reviewing the achievement of the projects against the set objectives, both from the written report and field observations. The present report is critical to the decision makers

of the Arannayk Foundation whether to extend the project or not. Nationally and internationally, it is good to measure the community based nature conservation intervention.

### **Context and objective of the project**

Chimbuk Belts in the Bandarban district is an important biodiversity hotspot covering the tropical wet mixed forest ecosystem. The rich diversity in flora and fauna in the Chimbuk Belt developed a unique forest ecosystem with numerous numbers of fountains and streams provided a nature dependent livelihood of the indigenous communities (HF 2011). Before 3 to 4 decades, this area had a dense evergreen forest harboring innumerable biodiversity. The indigenous communities living inside this forest are Mro, Khumi and Bawm. The richness of floral diversity in the mountainous region creates the drinking water source through numerous fountains and streams (Laurance 2007). The present decrease of the floral diversity in the Chimbuk Belt made a serious threat to the indigenous communities for their water source along with other forest ecosystems (HF 2011). The local anthropogenic causes to deforestation along with the global effect of warming have made this situation worse off in the Chimbuk Belt. To restore the degraded forest resources and conserve the forest ecosystems, the present project was undertaken with the following specific objectives;

- a. To select the indigenous communities having the traditional capacity and organization to participate in community based conservation of the landscape and forest resources in the Chimbuk Belt.
- b. To restore the forest resources in the selected indigenous communities.
- c. To develop an institutional mechanism for conservation and sustainability of the community forest.

### **Project activities and outcomes**

Initially, the proposed project sites were located in 10 very adjacent *para* of the Chimbuk Belt on the basis of reconnaissance survey. The name of 10 adjacent *para* are 1) Jamini Para, 2) Mendoy Para, 3) Thomro Para, 4) Solar Para, 5) Fotasing Para, 6) Korang Para, 7) Kapru Para, 8) Rangu Para, 9) Pabla Headmen Para & 10) Kramadi Para. After started the activities of first quarter of the project, two more *para* also visited on the basis of feasibility study. However, after the orientation program, the HM started to visit the field since 04 June 2009. Firstly the HM discussed with the *Karbery* (root level representative of customary administration in hill districts) of the above *para*. They informed the community people about the objectives and proposed activities of the project. On the basis of availability of community forest and interest of the community people, the HF visited the forest. After visiting all *para* which are mentioned above, Humanitarian Foundation proposed Kapru Para and Korang Para to select as project site. The project mobilized the Mro communities to restore and conserve the surrounding village common forest (VCF) traditionally intended to conserve by them. The profile of the selected communities and VCF are given as below (HF 2011) as in Table 1 and Table 2;

**Table 1: The socio-demographic features of Kapro Para and Korang Para in the Bandarban district of Bangladesh.**

<b>Variables</b>	<b>Kapro Para</b>	<b>Korang Para</b>
Mouza	Lemu Palong	Galangga
Mouza No.	304	364
Union	Soroui	Galangga
Upazila	Lama	Ruma
District	Bandarban Hill District	Bandarban Hill District
Ethnicity	Mro	Mro
Religion	33 families are Christian and 3 families are Crama.	11 families are Christian and 16 families are Crama.
Karbary	Ing-Chong-Mro	Palea-Mro
Headman	Khaing-Oai-Mro	Menroth-Mro
Number of family	34	28
Population	274 (Male-133 & Female-141)	184 (Male-94 & Female-90)
Education facility	Two Girza, One temporary school upto class three.	One Girza, One temporary school upto class three and One community centre.
Para area	326 acre	100 acre
Homestead area	25 acre	15 acre
Community Forest Area	301 acre	85 acre
Occupation	Mainly Jhum cultivation, two families partly dependent on business.	Mainly Jhum cultivation, six families partly dependent on business.
Return period for Jhum	3 to 4 years	3 to 4 years
Method of Jhum cultivation	Traditional	Traditional
Distance from Bandarban Sadar	45 km	39 km
Position/Location	Right side from Bandarban Thanchi Road and opposite from Nilgiri Porjaton Complex.	Left side from Bandarban-Thanchi road on Chimbuk Belt.

**Table 2: The governance and management issues regarding village common forests in the Chimbuk Belt of Bandarban district, Bangladesh.**

Governance and Management issues	Kapru Para	Korang Para
Customary Committee	<p><b>A.</b> Kapru para community has a <b>Customary Committee</b> to protect the VCF.</p> <p><b>B.</b> There are <b>four members</b> in the Customary Committee to protect the VCF.</p> <p>Customary Committee takes the decision &amp; community people follow it.</p> <p>Through the Customary Committee conservation work is started <b>since 1976</b>.</p> <p>At the time of Customary Committee formation there was living <b>22 families</b>.</p> <p>The beginning size of the VCF was <b>100 acre</b> (approximately).</p> <p>There were 220 people at the beginning of the VCF (approximately).</p> <p>The size of the VCF is <b>increased</b> because the community people realized in regards to the population they need bigger VCF area to survive though the diversity decreased day by day through human interference.</p> <p><b>C.</b> Through <b>observation &amp; sharing</b> with their Community Leaders they accept us.</p> <p>From the beginning they are collaborating with our project</p>	<p><b>A.</b> Korang para community has a <b>Customary Committee</b> to protect the VCF.</p> <p><b>B.</b> There are <b>twelve members</b> in the Customary Committee to protect the VCF at present.</p> <p>Customary Committee takes the decision &amp; community people follow it.</p> <p>Through the Customary Committee conservation work is started <b>since 1955</b>(approximately).</p> <p>At the time of Customary Committee formation there was living <b>6 families</b>.</p> <p>The beginning size of the VCF was <b>100 acre</b> (approximately).</p> <p>There were 60 people at the beginning of the VCF (approximately).</p> <p>The size of the VCF is <b>decreased</b> because the VCF is situated near by the road.</p> <p><b>C.</b> Through <b>observation &amp; sharing</b> with their Community Leaders they accept us.</p> <p>From the beginning they are collaborating with our project</p>
Problem facing	<p>They have facing problem from the outsider. Outsider wants to purchase trees &amp; bamboo from the VCF. In different way they try to convince the community people.</p> <p>Near Kapru Para VCF, there is also developed Nilgiri Porjaton Complex. For that reason some of the area of VCF was degraded.</p> <p>VCF was also degraded through road construction.</p>	<p>VCF was degraded construction at the time of road construction.</p> <p>Population pressure is also a great problem for the VCF.</p>

Governance and Management issues	Kapru Para	Korang Para
Trees and Wildlife at the time of VCF establishment.	<p><b>Trees:</b> Latkon, Garjon, Darmara, Goda, Civit, Jaganna gula, Gila lata, Banspata &amp; Painna Mandar were available at the time of establishing the VCF.</p> <p><b>Wildlife:</b> Wild boar, Deer, Common Birds, Different snakes, Lizards, Bon murag, Owl (pecha), tiger and Bear were present at the time of establishing the VCF.</p>	<p><b>Trees:</b> Latkon, Garjon, Darmara, Goda, Civit, Jaganna gula, Gila lata, Banspata &amp; Painna Mandar were available at the time of establishing the VCF.</p> <p><b>Wildlife:</b> Wild boar, Deer, Common Birds, Different snakes, Lizards, Bon murag, Owl (pecha), tiger and Bear were present at the time of establishing the VCF.</p>
Trees & Wildlife at present time	<p><b>Trees:</b> Latkon, Garjon, Darmara, Goda, Civit, Jaganna gula, Gila lata, Banspata &amp; Painna Mandar are endanger or extinct at present time.</p> <p><b>Wildlife:</b> Wild boar, Deer, Common Birds, Different snakes, Lizards, Bon murag, Owl (pecha) are seen at present but tiger and Bear were extinct from the VCF.</p>	<p><b>Trees:</b> Latkon, Garjon, Darmara, Goda, Civit, Jaganna gula, Gila lata, Banspata &amp; Painna Mandar are endanger or extinct at present time.</p> <p><b>Wildlife:</b> Wild boar, Deer, Common Birds, Different snakes, Lizards, Bon murag, Owl (pecha) are seen at present but tiger and Bear were extinct from the VCF.</p>
Harvesting	At the time of Common interest like as School, Girza & house preparation they collect trees and bamboo fro the VCF.	At the time of Common interest like as School, Girza & house preparation they collect trees and bamboo fro the VCF.
Bamboo Species	Muli bamboo is available there. Baijja also found but not available.	Muli bamboo is available there. Baijja(bamboo) also found but not available.
Difference in water flow in last 5 years	<p><b>Water Flow:</b> They have observed difference in water flow in last 5 years.</p> <p><b>Reason for decline:</b> Tree cutting for road construction &amp; degradation of VCF.</p>	<p><b>Water Flow:</b> They have observed difference in water flow in last 5 years.</p> <p><b>Reason for decline:</b> Tree cutting for road construction &amp; degradation of VCF.</p>
Minor Forest Products (MFT)	<p>Production of bamboo and other minor forest products have declined.</p> <p>MFT are bamboo &amp; cane.</p>	<p>Production of bamboo and other minor forest products have declined.</p> <p>MFT are bamboo &amp; cane.</p>

## Project outcome

- a. To select the indigenous communities having the traditional capacity and organization to participate in community based conservation of the landscape and forest resources in the Chimbuk Belt.

As a well organized indigenous community, the project selected the Mro tribe to mobilize the VCF. The achievements are as follows (Table 3);

**Table 3: Achievement of the project under objective ‘a’ implemented by the Humanitarian Foundation.**

List of Planned activities	Achievements
Conduct community awareness course/ community awareness raising meeting on ecosystem, biodiversity.	In each month Village Common Forest (VCF) Committee organize community meeting to make awareness on the importance of natural forest and biodiversity.  Now the community people are mostly conscious about the natural regeneration of the VCF.  At the 8 <sup>th</sup> quarter of the project we have celebrated the 5 <sup>th</sup> June 2011 as a <b>World Environment Day</b> at Korang with the community people of Kapru and Korang Para.
Conduct baseline survey	Baseline survey has been conducted and report submitted to Arannayk Foundation.
Formation of apex body	An Apex Body was formed comprises of 15 members. Member of the apex body always cooperate the VCF committee.
Flipchart development & Printing for community awareness raising	<b>Module &amp; picture</b> of the flipchart is developed. Scanning is also completed. It is in the process of printing.
Training of CBOs on organizational development and management/Leadership training	Twenty three people of Korang and Kapru para have gotten training on Leadership or Organizational development. They able to take decision for the wellbeing of the Community Forest. In case of restoration, mixed fruits garden and revolving fund they play the main role.
Technical training to project participants on forest conservation and natural resource management	Six people of Kapru & Korang Para have taken training on <b>grafting</b> at BARI training centre, Khagrachari.
Facilitate community based savings and credit.	This is an ongoing activity. The major task is <b>facilitating</b> community based savings and credit includes collection of savings in monthly basis, motivate community on the value of <b>personal savings</b> , organize meeting with the community, keep and maintain proper record of savings in the register/ record book and deposit collected savings in the respective community bank account.
Identify and strengthen existing best practices.	

List of Planned activities	Achievements
Facilitate household income plan (HHIP) to conduct alternative IGA.	This activity was done. But this activity will be continuing. Some potential IGAs are <b>Tailoring, Handicrafts, Grafting &amp; Weaving; Orange, Banana,, Pineapple, Papaya &amp; mixed fruits</b> gardening; rearing of <b>Poultry, Pig &amp; Cow</b> ; Cultivation of <b>Pumpkin, Cucumber,</b>
Provide training to project participants on Income Generation Activities (IGAs).	<p>20 people of Kapru para &amp; 20 people of Korang have taken training on <b>poultry and livestock</b> rearing. Orientation of <b>vaccination</b> on B.C.R.D.V. &amp; R.D.V for Poultry and anthrax for livestock has done.</p> <p>Woman of Kapru para have taken training on <b>weaving</b>. The number of participant is 20. Trainer has facilitated to purchase the quality thread (wool). Participant has received training on Scarf, Blanket &amp; Chador weaving.</p> <p>6 people of Kapru &amp; Korang Para have taken training on <b>grafting</b> at BARI training centre, Khagrachari.</p>
Provide matching/ revolving fund to project participants for IGAs	<p>On the basis of necessity we support the community people in case of business like as fertilizer, Nursery development, Poultry &amp; livestock rearing and mixed fruits garden.</p> <p>3,55,000 taka of the revolving fund were disbursed at Korang para and 4,05,000 taka disbursed at Kapru para for different IGAs.</p>
Design, develop and erect signboard and billboard.	<p>A total of 3 <b>billboards</b> and two <b>signboard</b> were designed, developed and erected at the project site and on the way of Bandarban to Nilgiri.</p> <p><b>Two sign board</b> erected at the Mixed fruits garden of Kapru and Korang Para.</p>

b. To restore the forest resources in the selected indigenous communities.

To fulfill this objective, the project conducted study to document and publish indigenous knowledge on restoration and conservation. The project initiated the landscape development practice by reforestation. The project also encouraged the Mro's best traditional knowledge to practice. Table 4 describes the project's major achievements.

**Table 4: Achievement of the project under objective ‘b’ implemented by the Humanitarian Foundation supported by the Arannayk Foundation.**

List of Planned activities	Achievements
Conduct study to document and publish indigenous knowledge on restoration and conservation	We are conducting the study to document and publish indigenous knowledge on restoration and conservation.
Landscape development and forest/biodiversity restoration activities (e.g., tree planting on along water streams, degraded community reserve forests and other community land)	<p>A total of 5281 seedlings of fruits and timber species on the basis of indigenous knowledge were transplanted at Kapru Para and 5125 at Korang Para. Fruits &amp; timber seedlings comprise of Garjan, Chapalish, Civit, Kanjol, Motor koroi, Bohera, Sal, Palash, Bon Sonalu, Khoir, Lohakat, Chickrasi, Pitraj, Chattian, Chalta, Amloki, Kali bansh (bamboo), Baijja bansh, Ramgoi Amm, Jolpai, Lebu, Peara (guava), Kanthal, Amra, Banspata, Arjun, Agor, Rajkoroi &amp; Bokul.</p> <p>Average servable rate of seedlins at &amp; Kapru Para is 78.2%.</p> <p>Kapru Para VCF committee take care the plantation &amp; restoration activities.</p>
Encourage their existing best practices through utilization at the time of project period.	<p>Community raise seedling surrounding their house which on is very important for forest conservation.</p> <p>Community forest conservation is one of their best practices. We encourage the community to conserve the Village Forest.</p>

- c. To develop an institutional mechanism for conservation and sustainability of the community forest.

To fulfill this objective, the project initiated the group formation for better management of VCF. The following table 5 shows the details of the group formation.

**Table 5: Group dynamism intervened by the Humanitarian Foundation supported by the Arannayk Foundation.**

<b>Group dynamism</b>	Kapru Para	Korang Para
Population	274	184
Number of groups	1	1
Basis of group formation	Representative from each family	Representative from each family
Written Constitution	Have written constitution	Have written constitution
Size of Executive Committee (EC)	Committee of 9(nine) member. <b>Position:</b> President, Vice president, General Secretary, Treasurer & Executive Member	Committee of 9(nine) member. <b>Position:</b> President, Vice president, General Secretary, Treasurer & Executive Member.
Female representative	2(two) female representative.	2(two) female representative.
Role of Woman	Women are participate at every stage of conservation & restoration.	Women are participate at every stage of conservation & restoration.
Committee Formation Process	Through discussion	Through discussion
Conflict between present EC & past Customary Committee	No Conflict	No Conflict
Bank account	They have bank account	They have bank account.
Saving Scheme	They have saving scheme. Per person twenty taka per month.	They have saving scheme. Per person twenty taka per month.
Monthly meeting	They meet at monthly meeting.	They meet at monthly meeting.
Resolution writing	They don't write resolution. Project staff taken note on the discussion then they facilitate to write resolution.	They don't write resolution. Project staff taken note on the discussion then they facilitate to write resolution.

## Impacts of the project

The impacts of the projects are outlined below for all the three objectives;

1. Community people kept them away to cut the Jhum surrounding the village common forest.
2. Natural **regeneration** of the VCF is increased.
3. **Forest cover** of the Kapru and Korang para VCF is increased.
4. Kapru Para Village Common Forest (VCF) Committee Protect the **cutting** of one kind of **Shrub**, which is locally called **Kantit Ram** (Mro Name). Local people claimed one businessman came from Khulna and started to collect the mentioned shrub. But the VCF committee has taken **decision** not to cut the shrub from the Village Common Forest. Because they have understood that herbs and shrubs are very important for **water sources**.
5. Baseline survey report under this project acted as a guideline to conduct restoration and income generation activities.
6. Apex Body acts as a shelter to conserve the Village Common Forest (VCF).
7. VCF committee maintains monthly meeting resolution document, cash and ledger book.
8. The committee formed by the project is trying to register the VCFs for their communities.
9. The VCF committee created a mixed fruit garden outside of the VCF and managing it accordingly.
10. Five people of Kapru para and eight person of Korang Para have taken initiative to develop community nursery.
11. The VCF committees of Kapru Para and Korang Para have taken initiative to establish nursery at Kapru and Korang para.
12. Natural regeneration increased in the VCF of Kapru and Korang Para.
13. Now they are more interested to conserve the community forest and other best practices.

To reduce the dependency on the natural forest the community people have taken different initiative of Income Generating Activities (IGAs).

1. The community people of Kapru and Korang Para have taken initiative for poultry rearing.

**Case 1:** Hailang Mro father Menpoi Mro, Kapru para and Mangrom Mro father Kongmen Mro of Korang para have taken initiative for poultry rearing.

**Case 2:** Loilok Mro, Father Sakoi Mro, Kapru Para have taken initiative for weaving.

2. Savings of Kapru Para VCF committee upto March 2011 is **11260** taka and Korang Para **7010** taka only.

3. People of forest conservation committee collect the savings and now they are too much interested.

### **Sustainability potentials**

The impacts show a good potential of sustainability of the capacity achieved by this project. However, the good health of the corresponding village common forests is dependent on some important factors, e.g., sustainability of the institutional support, activities altering the economic behavior of the participant, activities enforcing the conservation wisdom of the participants, etc. So, sustainability of restoring and conserving the VCF depends on at least the above factors. It is difficult to conclude how long the institutional support will be needed to make the changes permanent.

### **Weakness/Areas that need to be strengthened**

The participants opined that they needed more supports to find out the alternative livelihoods. More training/workshop is needed to uphold the activities. The revolving funds provided to the VCF committee was deemed to be insufficient by the participants. So, more funds should be given to the VCF committees for their alternative livelihood activities. The uncertainty of the land ownership of the VCF made the participant a little bit worried about the sustainability of their activities. So, supports to them to register their VCF lands are necessary. However, the VCF land proprietary should be within the regime of the common property regime. It should be legally defined as a communal resource. But the roles and regulations of this common property resource should be monitored by the government authority.

### **Recommendations**

The reports and corresponding field visits show that the project has a significant effect on restoring and conserving the village common forests and their surroundings. The impacts show a good potential of sustainability of the capacity achieved by this project. However, the good health of the corresponding village common forests is dependent on some important factors, e.g., sustainability of the institutional support, activities altering the economic behavior of the participant, activities enforcing the conservation wisdom of the participants, etc. So, sustainability of restoring and conserving the VCF depends on at least the above factors. It is difficult to conclude how long the institutional support will be needed to make the changes permanent. However, it is recommended to extend the project at least one more term. To make the restoration and conservation activities sustainable, the evaluator thinks that Reducing Emissions from Deforestation and forest Degradation, conserving and enhancing forest carbon stocks, and sustainable managing of forests (REDD+) activities will have a good potential in the project sites. To introduce this activity, baseline carbon measurement will be necessary in the corresponding VCFs.

Global climate change is a serious concern now-a-days incorporating the most challenging issues facing humanity. To mitigate the global climate change, it is expected that REDD+

will be the central forestry activities in the tropical developing countries after 2012 (Skutsch & Trines 2008).

The financial incentives for REDD+ in the pilot projects established in tropical and sub-tropical areas in Asia, Africa and South America have been found to alter the drivers of land use changes by reducing opportunity costs of retaining forest cover, and are often promoted as multipartite solutions that not only generate profits and reduce carbon emissions, but also provide benefits for human development and biodiversity (Carlson & Curran 2009). India and Costa Rica have already had success with programs to restore their forests and they feel they should receive compensation for these early areas assigned to logging concession and is keen for REDD+ to support sustainable forest management (UNFCCC 2007). Stickler et al. (2009) found that nations in the Amazons region can potentially participate in REDD+ by slowing clear-cutting of mature tropical forests, slowing or decreasing the impact of selective logging, promoting forest regeneration and restoration, and expanding afforestation and reforestation. As ecosystem services derived from REDD+ projects will have a global interest, it could access a large pool of global stakeholders willing to pay to maintain carbon in forests. Singh (2008) confirms that appropriately designed community-based forest management under REDD+ can provide a means to sustain and strengthened community livelihoods and at the same time avoid deforestation, restore forest cover and density, provide carbon mitigation and create rural assets. However, before adopting REDD+ as an effective deforestation-reduction mechanism, decision on the nature of carbon buyers and sellers, financing mode, compensation scheme, and type of land use to be targeted should be made (Oestreicher et al. 2009). However, good governance and political endeavors are also important to make this program successful (Melick 2010).

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