Project "Empowering civil society organizations and local communities to effectively participate in the implementation of Vietnam's Emission Reduction Program (ER-P)"

PROPOSED

Mechanism for Forest Change Independent Monitoring (FCIM)

Within the framework of the Emission Reduction Program in six North Central Coast Provinces of Viet Nam

Centre for Sustainable Rural Development (SRD)

International Centre for Tropical Agriculture (CIAT)

Centre of environmental and biological resources in Nghe An (CEBR)

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I- Background

Within the scope of the Project "Empowering civil society organizations and local communities to effectively participate in the implementation of the Emission Reduction Program in six North Central Coast provinces of Viet Nam" (hereinafter referred to as Project), funded by the World Bank through the Network of sustainable agriculture and natural resources in Asia, Nepal (ANSAB), coordinated and implemented by the Centre for Sustainable Rural Development (SRD) from June 2018 by June 2019, 7 workshops were held for Civil Society Organizations (CSOs) and Local Communities (LCs) in 6 North Central Coast provinces to identify the needs, preconditions, and gaps for CSOs and LCs to participate in the implementation of the Emission Reduction Program in 6 North Central Coast provinces (hereafter referred to as Emission Reduction Program or ER-P), specifically, participating in forest change monitoring. At these workshops, CSOs and LCs agreed that they want to participate in monitoring:

1- Area of primary forest (how much forest area is lost? For what reason?)

2- Conversion of forest quality - forest type: rich, poor and medium forest;

3- Area of forest burned;

4- Area of natural forest converted into plantation (small trees, big timber);

5- Number of violations of forest law and forest fires;

6- Forest area is organised by forest owners to be allocated to community for management;

7- Number of groups / groups of forest management communities formed, their area of effective management;

8- Wood processing workshops; Number of people/teams exploited natural forests;

9- Number of projects required forest conversion and households practicing shifting cultivation.

The CSOs and LCs also identified the preconditions that enable them to effectively monitor the forest:

+ Institutional: There must be a decision of the competent authority (for example, the Prime Minister's Decision promulgates the Emission Reduction Program, which regulates the independent monitoring of CSOs and LCs; or Decision of the Chairman of the Provincial People's Committee).

+Accessibility: in the decision, there should be provision for accessing data sources (forest databases, documents), fieldwork (forests or places where infrastructure projects are implemented), and competent agencies.

+ Resources: finance, human resources (capacity) are needed for them to monitor.

+ Information: to monitor, CSOs and LCs need to be provided with detail plans, contracts, project design, detailed regulations on forest protection and management.

+ Technology: they should be equipped with remote sensing technology, measuring and geopositioning equipment (GPS).

+ Skills: they need to be trained in data analysis, reading maps, writing reports ...

Another activity of the project is to analyse the 4 methods of forest change monitoring currently applied or piloted in Vietnam. They are: i) Forest Management Information System (FORMIS), specifically the Forest Resource Monitoring System (FRMS). This system is funded by the

Finland government and managed by the Viet Nam Administration of Forestry (VNFOREST); ii) Participatory forest governance monitoring system (PFG) developed and tested by ActionAid in 3 provinces in which the core element is to develop a MobiApp that allows people to monitor and report violations of the Convention, including deforestation; iii) Forest Change Measurement and Reporting system (FCMR) supported by JICA in some central provinces for forest protection system (forest rangers); and iv) A real-time monitoring system for forest developments using Terra-I (a software) developed by the International Centre for Tropical Agriculture (CIAT) and piloted by forest owners and forest rangers at Di Linh, Lam Dong within the framework of UNREDD Vietnam Program Phase II.

After analysing the strengths and limitations of the methods, the project proposes to build FCIM for CSOs and communities using Terra-I system for the following reasons:

- The authorities, forest rangers at all levels and forest owners (in Di Linh district of Lam Dong province and Tuong Duong district of Nghe An province) highly appreciate the Terra-I system in providing forest change alerts within a period of 16 days, especially the hard-to-reach forests.
- Civil Society Organizations and local communities see the potential of this software in promoting transparency in information related to forest change as well as an opportunity for CSOs and communities to actively participate in forest change independent monitoring and enhance accountability of relevant state agencies.
- The Terra-I system was developed on open source platform and absolutely free. The satellite images data used for analysing forest loss are also freely available.
- Terra-I system can be compatible with many other platforms, so it can be integrated with other database systems, such as the Forest Management Information System (FORMIS).
- Through plotting in Tuong Duong district, the farmers admitted that this system was easy to use, therefore suitable for all types of users, especially farmers.

The FCIM system will be designed based on recommendations from the analysis of the above mentioned forest change monitoring methods and addressing the gaps mentioned as well.

II- Legal foundation of FCIM

According to the Decision No. 419/QD-TTg dated April 5th, 2017 of the Prime Minister promulgating the National REDD + Action Program until 2030 (NRAP), the Operational Group (c) “Completing the ready-to-implement elements of REDD+ to meet international requirements”, including an action plan "Develop mechanisms to encourage the participation of local communities, ethnic minorities, women, political - social organizations, non-governmental organizations and related agencies.”

The Emission Reduction Program in 6 North Central Coast Provinces (ER-P) developed by the Vietnamese Government and endorsed by the World Bank in January 2018 including 3 components, of which component 1 is to enhance a favourable environment to reduce emissions. In component 1, there are sub-components, of which sub-component 1.2 is Strengthening forest governance and forest law enforcement. In order to do this, one of the activities proposed in the sub-component is to implement a forest change independent monitoring system by communities and social organizations (activity 1.2.3). Currently the project is submitted to the Prime Minister by the Ministry of Agriculture and Rural Development.

Thus, the legal basis of the Forest Change Independent Monitoring System for CSOs (FCIM) is the Prime Minister's Decision promulgating the North Central Emission Reduction Programme, in which the FCIM system is a sub-system of it.

III- Purpose, target users and scope for using of the FCIM system

Purpose of FCIM system: Enhance the participation of CSOs and communities in forest change monitoring, increase transparency in the process of implementing the Emission Reduction Program in 6 North Central Coast provinces.

Target users of the system are civil society organizations and local communities. The civil society organizations in the context of FCIM system include socio-political organizations, social-professional organizations, and non-governmental organizations (including science and technology organizations). The local community is the people in the areas where the Emission Reduction Program is implemented, including community based organizations (CBOs).

Monitoring objects: are forests including special-use forests, protection forests and production forests managed by all forest owners (organizations, Commune People's Committee, communities, households).

Monitoring aim: Detecting deforestation for early warning to relevant parties, including authorities, forest owners, to investigate the causes and provide solutions to prevent / handle unexpected forest changes and inform people in the localities.

Scope of use: The FCIM system is designed within the framework of the Emission Reduction Program in 6 North Central Coast Provinces, helping to realize Vietnam's commitment to the World Bank, which is "to implement independent monitoring of forest changes by social organizations and local communities."

In the future, this system can be considered for adopting in the National REDD + Action Program (NRAP), Payment of Forest Environmental Services program and Provincial REDD + Action Plans (PRAP).

IV- Overview of FCIM system

4.1. FCIM System Diagram:

The FCIM system includes regulations, mechanisms (including technology) and the operational structure which is summarized into three main pillars as illustrated in the following flowchart:

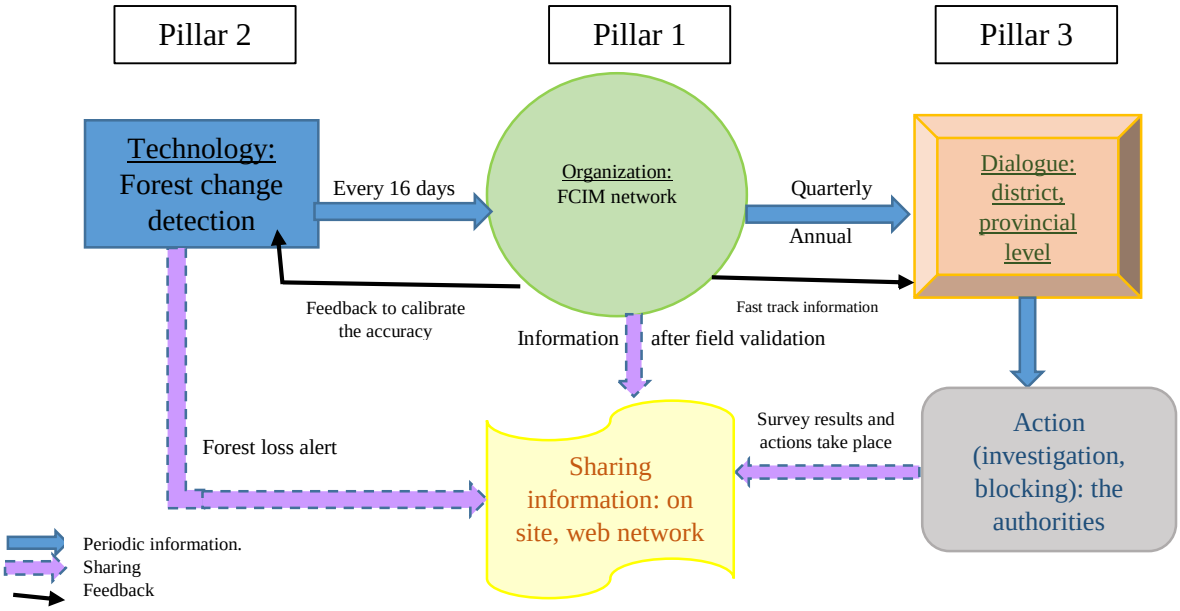

Figure 1: FCIM system model

Guiding principles for designing and operating the forest change independent monitoring system by Community and Civil Society Organization (FCIM):

- As a sub-system of the Emission Reducing Program (ER-P) being introduced by the Prime Minister's decision, therefore, FCIM System will operate within the ER-P, is a component of the ER-P's operating structure in general.
- Operating structure of FCIM system is a monitoring network of CSOs and Communities, with a CSO as a focal point. FCIM is independent from the current monitoring system in forest sector. The purpose of FCIM does not conflict with but complementary to the existing system by enhancing the participation of civil society and increase the effectiveness of forest monitoring.
- The FCIM system operates independently but interchange with the operation regulation of the ER-P;
- The operating the FCIM system will be financed by the same source with the ER-P, i.e. from management fees in carbon revenues and / or forest environmental services;
- FCIM system includes a multidimensional communication: FCIM provides early warning information about forest loss and takes updated results and feedback from stakeholders. There is no intention that FCIM will replicate or replace other official information systems.

FCIM system consists of three (3) pillars as follows:

Pillar 1: Organization. CSOs who are committed, competent and voluntary form an Independent Monitoring Network (FCIM network), operating according to the operating regulations proposed by the CSOs themselves and endorsed by the government as part of the Emission Reduction Program. The FCIM network will be established and operated from the grassroots level to the provincial level and the North Central Coast region. The FCIM network will operate proactively, provide independent opinions and connect with people as well as relevant state agencies according to an agreed information exchange mechanism. The FCIM network will be the main user of Terra-I technology.

Pillar 2: Technology. Using satellite technology (Terra-I) to detect near real time, objective and independent information about forest changes so the CSOs and LCs do not have to rely on the government's forest management information system. This means the FCIM network can proactively collect forest change information at 16 days interval and quickly disseminate it as the alert for people and relevant agencies to conduct field validation.

Pillar 3: Dialogue. In the FCIM system, there is mechanism of regular dialogue between the monitoring network and local authorities in order to discuss forest loss situation, possible measures and action plans to prevent unexpected forest losses. Information on forest change, the results of the actions taken by the authorities will be made available to the public (after the dialogue and the agreed information to be disclosed).

The pillars are interconnected through the information exchange mechanism. Information exchange mechanism includes:

+ Forest loss alert information from the Terra-I system. This information will be updated and publicly available on the FCIM network website (integrated or linked to the Terra-I website).

+ Fast track channel from focal point of FCIM network to relevant government agencies when there is an alert of large area of forest loss or series of points of forest loss alerts for the same area and information from monitoring group/ team after detecting illegal deforestation.

+ Periodic information exchange channels: are the validation reports of the monitoring groups and general reports on the situation of the district, provincial and regional coordination boards.

+ Feedback channel: including feedback from the monitoring groups to update and improve forest change map from Terra-I system. Furthermore, there are also feedbacks from authorities about information on deforestation alerts.

4.2. Description of FCIM system:

4.2.1. Independent monitoring network of CSOs on forest change (pillar 1)

FCIM Network Structure is described as follows:

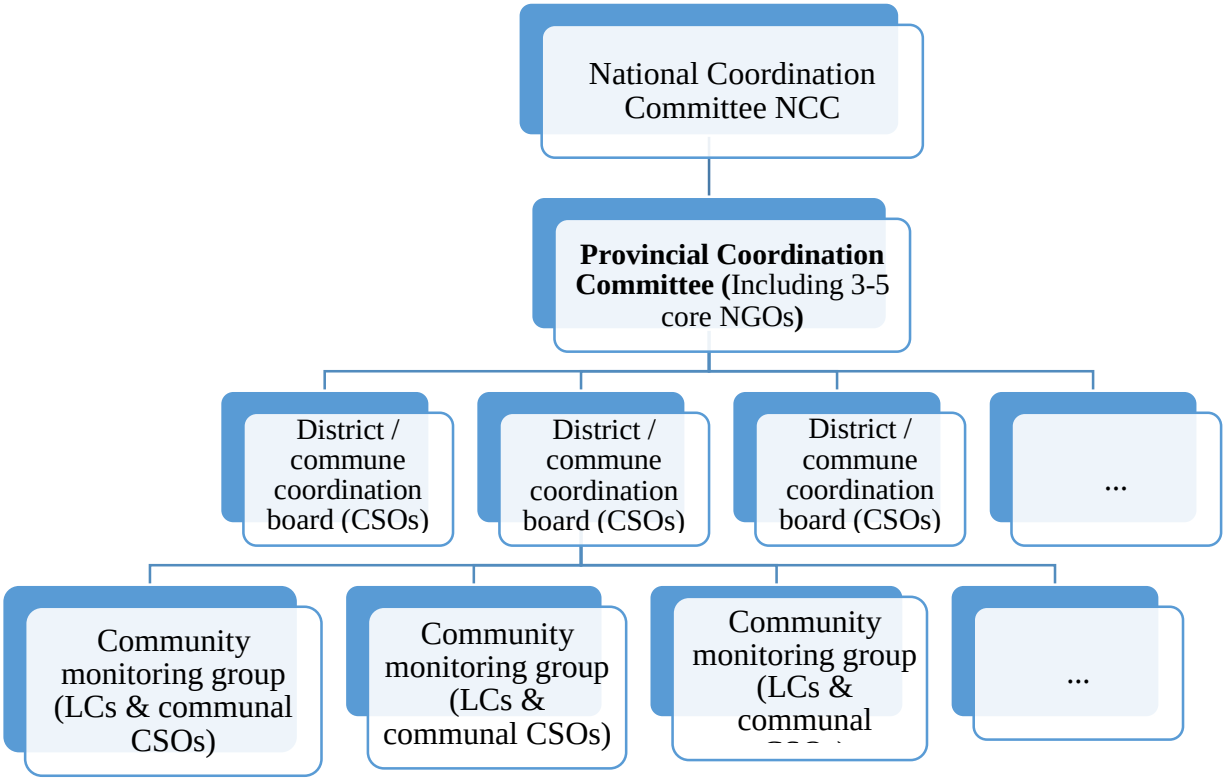

Figure 2: FCIM Network structure

The roles of FCIM Network are:

- Using Terra-I technology to detect and alert about forest changes in provinces, districts and communes.
- Organizing field verification to confirm if the changes happen and to initially identify the causes of change, the significance of change and forecast the risk of deforestation.
- Building capacity on using Terra-I technology for interested agencies and people.
- Discussing with state forestry management agencies periodically to investigate the causes of deforestation, propose solutions to overcome / prevent deforestation and forest conversion.

The network is formed at 4 levels: region, province, district and commune. There are coordination boards in three upper levels while at the commune level there are monitoring groups. The operation of the network at each level will be described in detail in section V below.

4.2.2. Technology (pillar 2)

+ Terra-I software uses satellite and remote sensing technologies to detect deforestation through forest change map and list of forest loss spots.

+ The Terra-I tool will be designed to gather information on forest change in accordance with local conditions, including information needs and software development.

+ Training and transfer of Terra-I to FCIM network.

+ Support for FCIM network to operate and perform monitoring tasks in practice, including receiving Terra-I warning information, selecting high priority forest change warning points, organizing field checking and putting information on the Terra-I system.

4.2.3. Dialogue and public information (pillar 3)

+ District / commune dialogue: the district coordination committee organizes a dialogue meeting between monitoring groups in the community and related parties (commune, district, forest owners, forest rangers, etc.) to exchange and explore the causes of forest change as well as action plans to prevent / reduce changes.

+ Provincial dialogue: Provincial Coordination Committee organizes a dialogue meeting between Coordination Committee with related parties (provincial and district authorities, forest owners, ranger beads, Natural Resources and Environment Departments, Department of Agriculture and Rural Development) to exchange and understand the causes of forest change as well as action plans to prevent / reduce changes and consolidate information in the monthly, quarterly and yearly Forest Monitoring Report .

+ The coordination committee makes monthly and quarterly forest monitoring reports, posted on the website of the Network.

+ Public Information: The website of the Forest Change Independent Monitoring Network (FCIM) is a public place for information on independent monitoring forest change collected and established by CSOs and local communities. Information includes deforestation maps, data and list of each deforestation site and related reports prepared by the monitoring groups and Coordination Committees at all levels. In addition to feedback on the cause of deforestation, the results of the authorities' actions after receiving the feedbacks are also publicized on this website. Furthermore, on-site publicity (at the office of the Commune People's Committee, village culture house, meetings at villages and meetings of People's Committees at commune and district levels) is also considered.

V. Operation of FCIM system

5.1. Monitoring network of social organizations

Operational diagram of the Network is described in the following diagram

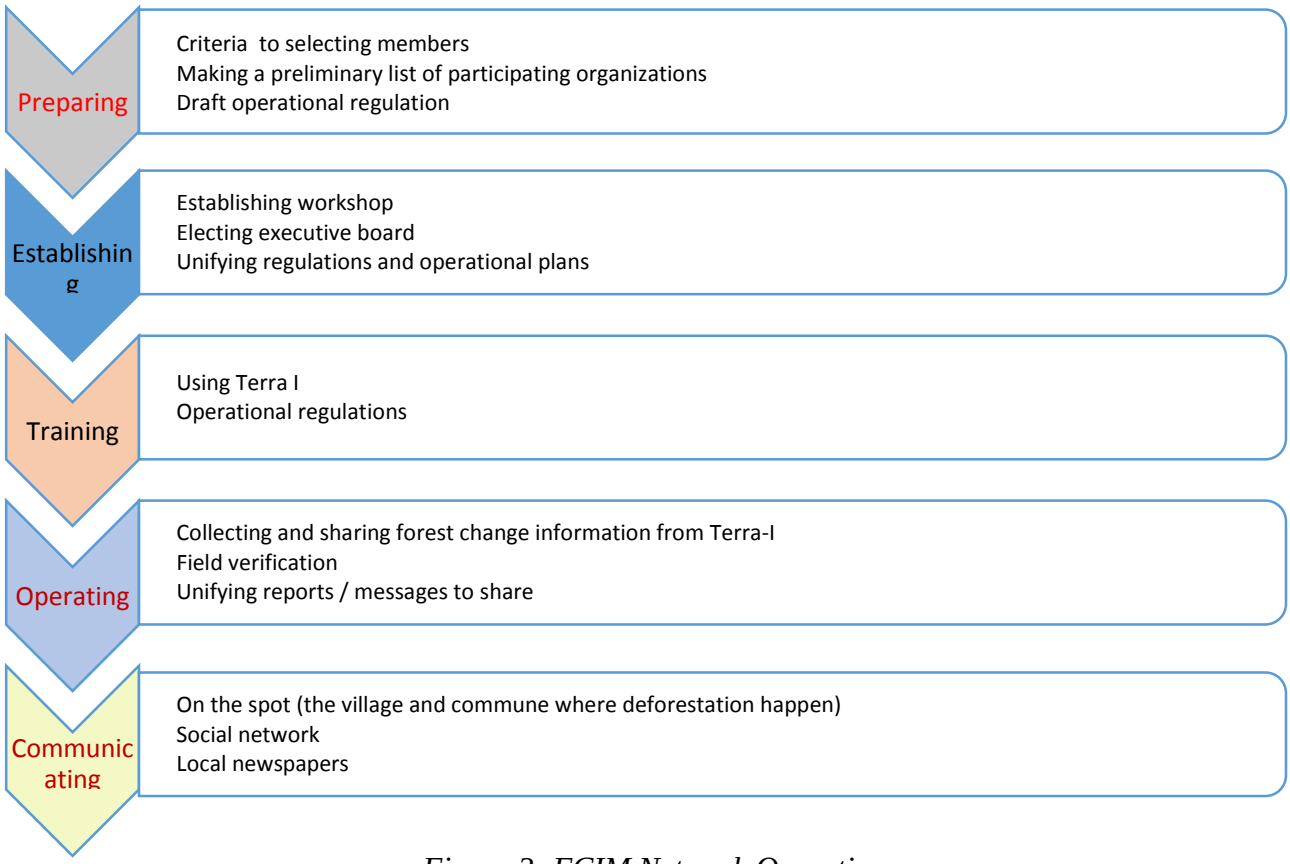

Figure 3: FCIM Network Operation

A core group of organizations interested in promoting social organizations to monitor forest governance should be established in each province. This group is responsible for listing / surveying social organizations with the same concerns; draft operational mechanism, plan to establish a monitoring network.

Operation regulations of the monitoring network includes:

+ Network name;

+ Purpose of establishment;

+ Criteria for selecting members include: voluntary, commitment, shared goals, suitable human resources, ...

+ Structure:

- Coordination Committee at all levels (region, province, district), or core group: consist of 3-5 organizations;

- Electing the coordination committee: nominate and vote at the meeting;

- Operation of the Coordination Committee: members elect the chair. The coordination committee agrees working mechanism such as quarterly meeting.

- Coordinator: The Coordination Committee appoints a coordinator to be the contact person for information sharing, prepare and implement the network's operation plan.

- The network has four levels: Regional (national in the future) - provincial level - district - commune.

- Recognition: The network is recognized as part of the ER-P operating mechanism.

+ The role / responsibility of the monitoring network:

- Applying Terra-I technology to detect and alert forest changes in the monitoring areas (province, district, commune).

- Organize field activities to verify information from Terra-I, confirm changes in reality; preliminarily diagnose causes of change, the size of actual change; forecast the possible deforestation (if possible)

- Building capacity of using Terra-I technology for interested agencies and people.

- Periodically interact with state management agencies in forest sector to investigate the causes of deforestation, propose solutions to overcome / prevent deforestation and forest conversion.

+ Operation mechanism of the network at commune level:

- Select the object and scope of monitor (a specific forest, the entire forest area of the locality).

- Planning monitoring at all levels (villages, communes, districts, provinces and countries), including field trip plans and dialogue with authorities.

- Participate in dialogue and exchange information with government agencies at the commune and district.

- Write a monitoring report after each site validation and update on the Terra-I page.

- Immediately provide information to the local authorities when there is warning about serious forest loss.

+ Operation mechanism of the network at district level

- Organize quarterly meetings for commune monitoring teams.

- District coordination committee summarizes the report on the number of deforestation spots in the district in the quarter, reports on the initial cause of forest losses as reported by the commune monitoring teams.

- Organize dialogues with district authorities on a quarterly basis.

- Update and summarize district monitoring reports and quarterly dialogue results on the website of the network.

- Participate in provincial network meetings and provincial dialogues.

+ Provincial network operation mechanism:

- Organize annual meetings with representatives of the district coordination committees.

- Summarize and consolidate the monitoring reports on forest change in the province

- Organize annual dialogue with the authorities in the province

- Update the forest change monitoring report of the provincial network and the results from the provincial dialogues on the website of the network

- Participate in the regional (national) network meeting

- Participate in the provincial REDD + Steering Committee or the provincial management board of the emission reduction programme.

+ Operation mechanism for the NCC regional level network (and the national level at latter stage)

- Appoint staff to update the Terra-I map every 16 days

- Organize annual meeting for representatives of the whole network

- Organizing training and updating skills for the network members.

- Participate in Central REDD + Steering Committee meetings, Steering Committee of North Central Emission Reducing Program to report / share monitoring results and advocate for the expansion/replication of the FCIM system to other provinces.

- Connect with national forest governance monitoring networks (VPA / FLEGT Core Group, VUSTA- Climate Change and Environment Alliance -VECCA) and international (Global Forest Watch).

5.2. Near real time forest change monitoring tool

5.2.1 Introduction of Terra I

+ Is an open source software.
+ Analysing freely available satellite images (radar images and optical images) to detect deforestation so the cost is low.
+ Analysis interval: every 16 days.
+ Spatial resolution: 10m.
+ Forest change information specifies the coordinates, number of plots, plots, villages / hamlets, and names of forest owners.
+ Estimate the size of lost forest area to classify priorities.
+ Easy to use so is suitable for CSOs and LCs

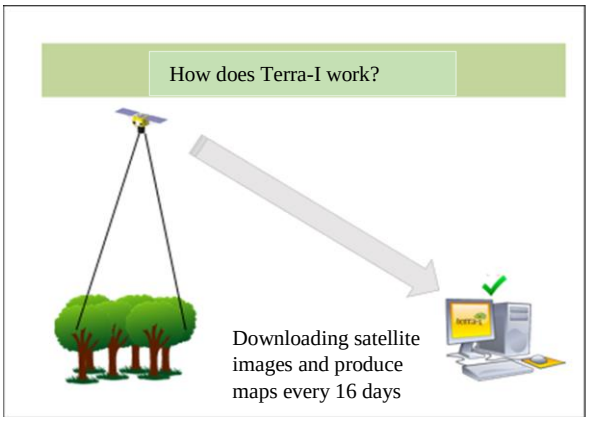

Figure 3: Diagram showing how Terra-I work

5.2.2 Design and training

• Step one: select the forest area to be monitored. Selection criteria include: areas where changes occur frequently; areas where disputes often occur; forest areas that have been allocated / contracted to households / communities; forest areas need protecting.

• Step two: Gather information about the needs and concerns of CSOs and local communities that the Terra-I system needs to provide. This step can be done through surveys or workshops with people and CSOs. The demand for information must be concretized to: the detail level,

level of frequency, form of information (maps, data ...), the way to disseminate information (email, message, posted on the website).

• Step three: disseminate and introduce the operational model of the Forest Change Independent Monitoring System (FCIM) using Terra-I to stakeholders (state agencies at all levels, CSOs, forest owners). This step can be done through holding a provincial workshop within half a day to a day.

• Step four: collect digital maps of selected forest areas for monitoring and develop forest change maps on the Terra-I system. Digital maps need to be in shapefile format (* .shp)

• Step five: train stakeholders. Including 2 days class training and 1 day of fieldwork.

+ Training contents of the class include:

- How to access the website; Search for relevant forest change maps by location, or by forest owner.

- How to locate a specific deforestation site and identify a route of site validation using Google map tool;

- How to use GPS devices;

- The tasks to be done at the site validation include how to fill in the form, take photos and update on the Terra-I website;

- How to plan and assign tasks to each member when going to the field.

+ Prepare for training: projectors, GPS devices, GPS apps installed in smartphones (GPS test for Android, GPS lite for iPhone) and form of field's validation.

5.2.3 Field validation

5.2.3.1 Purpose: field visits to confirm the forest loss information detected by Terra-I system, and identify the primary cause of deforestation. In addition, information about the landscape around the deforestation area helps to calibrate the Terra-I map.

5.2.3.2 Deploy a field verification: step by step see Appendix I

a) Preparation:

- Identify locations to validate (according to high priority) and set the routes for each day.

- Device: GPS, camera or smartphone with GPS app installed.

- Tools: a plan with routes to go to verify, a field check form, pen, cardboard.

- Other: snacks, drinking water, and other forest equipment.

b) In the field

+ Using a navigation tool (GoogleMap) or consulting local people to find the location to validate.

+ At the deforestation site:

- Selecting suitable place so that you can stand and observe all 4 North-East-South-West directions.

- Use GPS device or GPS software on the smartphone to determine the direction and coordinates.

- Observe the East-South-West directions and take photos;

- Use GPS to go around the deforestation site to measure the area of deforestation;

- Record the information on the verification form: the number of deforestation points, coordinates, date of field's verification, photos taken at each direction to observe and predict the causes of deforestation.

5.3. The mechanism of periodic dialogue between the FCIM Network and authorities and disclose information

5.3.1 Fast track information mechanism

A provincial and district management agency hotline will be established with the Monitoring Network so that the Network can provide information to be processed immediately.

Information to provide immediately includes:

+ Large forest loss points (more than 5ha) alerted by Terra-I.

+ Series of deforestation spots in one area (10 adjacent points).

+ Initial information from field validation predict the risk of expanding illegal deforestation.

5.3.2 Dialogue at district / commune level

a) Participants:

+ Representatives of government agencies at district-level include: representatives of the District People's Committee, District Forest Protection Department, Natural Resources and Environment Department and forest owners.

+ Commune representatives: Commune People's Committees and related agencies.

+ Representatives of provincial CSOs, representatives of forest protection patrol groups, representatives of related forest owners

+ From government agencies side, District People's Committee is the focal point. For CSOs side: focal point for dialogue is the Coordination Board of the monitoring network at district level.

b) Timing of the district dialogue: the first week of each quarter.

c) Two-way information mechanism: from the coordination board of the monitoring network to the government agency and vice versa: what information? How long is the response? To what extent is information disclosed?

d) Dialogue content:

+ Alert information related to forest change in the district in the previous quarter: number of alert forest loss spots, estimated area of loss, etc.

+ Results of field validation by FCIM at commune level

+ Difficulties and constrains; anticipated risk of future deforestation.

+ Recommendations / suggestions of FCIM network

+ Feedback from state agencies.

5.3.3 Provincial dialogue

a) Participants:

+ Representatives of government agencies at provincial-level include: representatives of the provincial People's Committee, Department of Agriculture and rural Development, Department of Natural Resources and Environment, Provincial Forest Protection Department.

+ Representatives of district and commune authorities.

+ Representatives of provincial CSOs, representatives of forest protection patrol groups, representatives of related forest owners

+ Focal point for government agencies: Provincial People's Committee. Focal point for CSOs: Coordination board of monitoring network at provincial level.

b) Timing for annual dialogue: the first month of each year.

c) Two-way information mechanism: from the monitoring network representative to the government agency and vice versa: what information? How long is the response time? To what extent is information disclosed?

d) Dialogue content:

+ Alert information related to forest change in the district in the previous quarter: number of alert forest loss spots, estimated area of loss, etc.

+ Summary of results from field validation by CSOs

+ Summary of results from quarterly district dialogues

+ Recommendations / suggestions from districts dialogues

+ Feedback from provincial government agencies.

5.3.4 Disclosure of information

The website of the Forest Change Independent Monitoring Network (FCIM) is a place for sharing information on independent monitoring forest change by local CSOs and LCs.

Information disclosed includes:

+ Map of deforestation (linked to Terra-I website).

+ Information on deforestation after validation (including initial causes of deforestation identified by the validation team).

+ Conclusion at district dialogues.

+ Conclusion at provincial dialogues.

+ Periodic reports of FCIM Network.

APPENDIX I: DETAILED INSTRUCTIONS OF FIELD VALIDATION

(detailed documents attached in a separate file)

APPENDIX II: GUIDELINES FOR USING TERRA-I TO BUILD A FOREST CHANGE MAP

(detailed documents attached in a separate file)