National Forest Monitoring Systems in the Context of REDD+: Important of Data Collection

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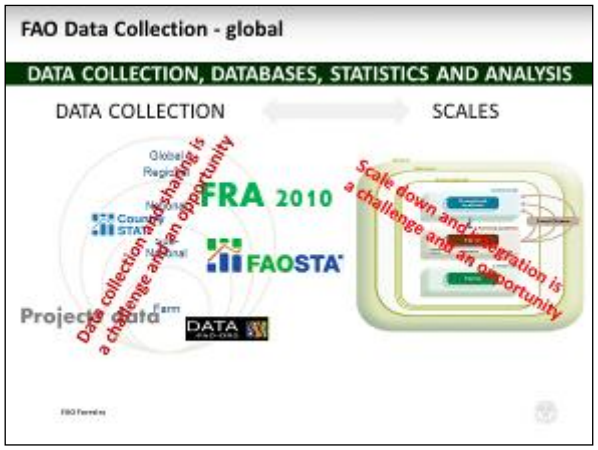
My presentation is trying to address the issue of forest monitoring in the context of REDD+. I will use FAO as one of the ways to frame this and the work of FAO in the last years on forest monitoring and why this is important.

We will go back to the mandate of FAO just to start with something simple. Within our mandate, it says that better information leads to better decisions which lead to better actions. I think this is the reason why we do monitoring. This is one of the reasons why we do monitoring, not only to inform others, but to inform ourselves to take better decisions and lead to better actions.

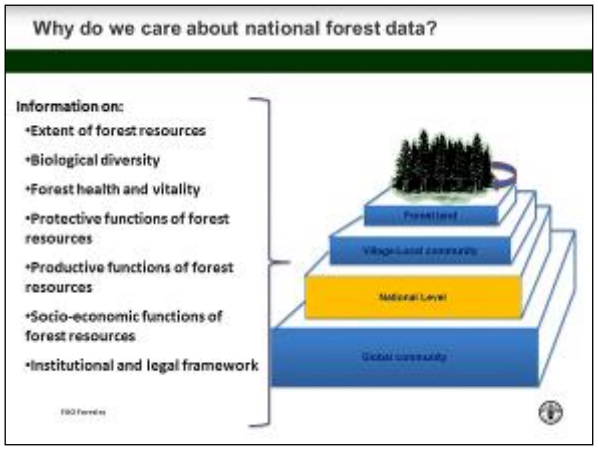
Why is forest monitoring important? I can summarize within two simple sentences, because providing key data for international reporting obligations, which is something that people are focusing very much recently, it is important and that includes in the context of climate change, national communications, greenhouse gas inventories, REDD+, in the context of other Rio Conventions, CBD, and etcetera. However, the most important reason why we do forest monitoring is because we want to better manage our forest and for that we need to understand better how we can use forest resources.



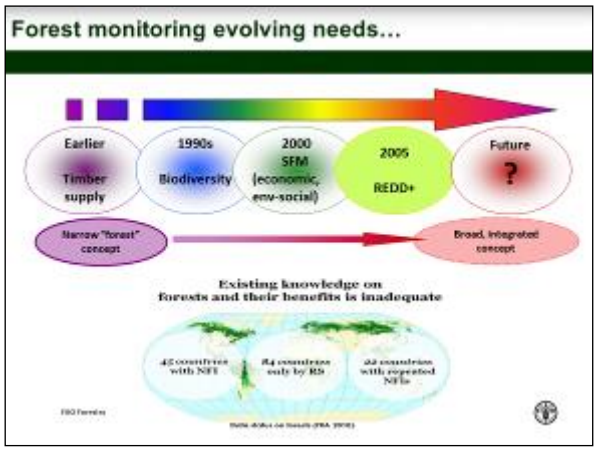
FAO is doing data collection. We have databases. We do statistics and we go even doing some analysis sometimes. We are facing these two things: data collection versus the scale of the data collection. If you all do what FAO has been doing, you could see that this includes obviously agriculture and forestry, but you see that we are working at three or four main levels. At the very local level; the farm, the forest land; at the sub-national level, with some eco regions within the country or some provincial or jurisdictional; at the national level where we try to convey national statistics; and at the global level trying to provide global datasets which may lead to global understanding of issues and how things may progress. Then when you deal with this, we notice that data collection and sharing is a challenge, but it is also an opportunity. I think this is the two sides of the coin I want to highlight in

this presentation that we are being challenged for the difficulties and for understanding the data we may need to collect, but it is also an opportunity to help us to make better decisions.

On the scales, this sub-national level leading to community, to farming systems sometimes, even landscapes also. Again, scale down and integrate information or scale up and integrate information depending on what perspective you are starting from, is also a challenge and an opportunity.

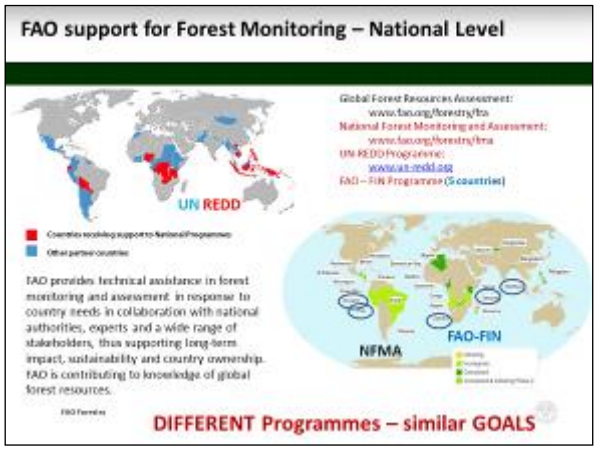


Why would you care about national forest data? Well, we look at our national forest data, because we are usually collecting information on our forests at different levels; forest land, the village and local community, the national level and the global community. We try to gather information on the stand of forest resources on biological diversity. As our colleague from earlier session pointed out, it is very important for functioning and for understanding the functioning and making sure that our ecosystems are functioning, forest care and vitality, protective functions of forest resources, productive functions of forest resources, socioeconomic functions and institutional and legal frameworks. We try to collect information that encompasses all these aspects as far as possible, because this is what all together will lead us to make better decisions.



What are the forest monitoring evolving needs in this context? I mean if we go back before the 90's, timber supply was the main reason for collecting information on forest resources. In the 90's we moved into biodiversity as one additional thing, and in the 2000's, we went to social and environmental data to be collected as well. Now, in the last seven years, REDD+ has been playing a major role on forest monitoring evolving needs.

Who knows what is coming in the future, but we will probably invent another label. This seems to be shaping on less landscape approach maybe where we may have to include some other needs in our monitoring exercises for forests. However, if we take just a quick picture of where we are and I just used the FRA[1] 2010 data, what you can see is that 45 countries have national forest inventories. 84 countries only have sort of remote sensing monitoring for forests, and 20 countries only have national forest inventories repeated. There is a sort of an evolving interest, but still we are far from having all countries doing what they may need on monitoring for the forests.



What FAO is doing now in supporting forest monitoring at the national level is through three main programs. Of course, we have the global resource assessment which is just gathering

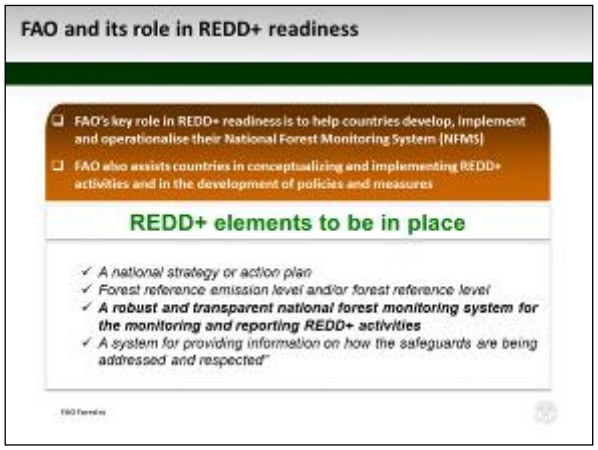
[1] Forest Resource Assessment

information from the correspondents and put that into a database and provide this every 10 years, but at the national level, we are working on three main initiatives at the moment. One is the UN REDD program that most of you know. This is a joint initiative between FAO, UNEP[2], and UNDP[3]. FAO supports the National Forest Monitoring Systems and MRV systems while supporting these UN REDD countries.

We have another program which is an old program of FAO that is part of our core activities, which is the National Forest Monitoring and Assessment[4] program. Through this program you can see in the map that all these countries have at least once supported their national forest inventories or national forest monitoring system and assessment exercises.

Within these, you see that there is another program now recently, which has been supporting five countries, which are the countries with the blue circles. These were meant also to support monitoring for REDD+, but in a comprehensive approach that sometimes encompass monitoring of forests, but plus other lands.

Those are the three programs that we are carrying simultaneously at the moment, and what I want to highlight is that they are different and they may have slightly different approaches, but at the end, their goals are similar, if not the same. You see that we cover a reasonable amount of developing countries.



What is FAO's role in REDD+ readiness? FAO has a key role in the REDD+ readiness and it is how to develop and implement and operationalize up to the extent possible National Forest Monitoring Systems. If you remember from Ms. Wong's presentation, National Forest Monitoring Systems is one of their requirements. You have to have a national forest monitoring system in place.

The convention does not tell you how the monitoring system has to be. It tells you later that these monitoring systems will have to produce some sort of data that are MRV-able, that is carbon, and

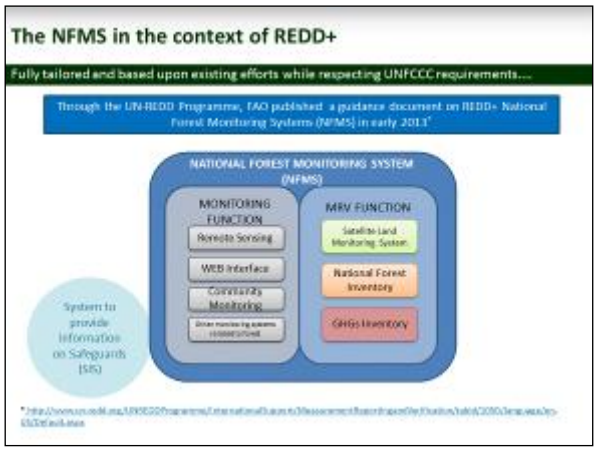
[2] United Nations Environment Programme: http://www.unep.org/
[3] United Nations Development Programme: http://www.undp.org/content/undp/en/home.html
[4] http://www.fao.org/forestry/fma/73408/en/

you can measure report and verify, but it does not tell you what your national forest monitoring system should contain. It is up to you to decide how you want to design your national forest monitoring system taking into account that you may need to report if you want to participate in REDD+ performance based payments. Carbon will fulfill in certain quality or requirements.

However, we also assist countries within this context to conceptualize and implement REDD+ activities mostly in assessing what are the regulatory frameworks at the moment and try to help them to decide which policies and measures they may take. As you see from Dr. Durst's presentation this morning, FAO has quite a large experience on working with countries on that. We cannot define what the best is or what the definition is of what we are doing, but we are working with countries to understand that better.

As I said, this is the requirement we are supporting the most, a robust and aspiring national forest monitoring system for the monitoring and reporting on REDD+ activities. This is the main core support that FAO gives at the moment through the UNDP program, but also through the other programs that you saw in the previous slide.

This is part of the four requirements. One requirement is a national strategy. The other one is through forest reference emission levels and forest reference levels. This is strongly linked to the UN National Forest Monitoring System. You have to provide information, not only on what is actually happening when you are implementing your actions, but also on what happened in the past. This has to be consistent. Again, the way you design and the way you conceptualize your national forest monitoring system has to take this into account. Finally, there is a system for providing information on how safeguards are being addressed and respected, because in your national forest monitoring system, you do not necessarily collect only carbon or only variables which are related to carbon estimates, you may collect information that may help you to provide information on how safeguards are being addressed and respected. This does not mean necessarily that you are monitoring those sectors. If some of you remember, it was quite a long debate about whether you monitor or not monitor safeguards, but your monitoring system can provide you relevant information. You should not ignore that.



In the context of the UNDP program, in order to put in context what elements the country needs to deal with when they think about national forest monitoring systems, we develop in the UNDP program as a conceptual framework. This can be summarized in this slide. You see that we understand that your national forest monitoring system has to provide carbon estimates. In that regard, you have what we call an MRV function. It is a way to simplify what it is and in this context, you need activity data. You need area; how your area changes when this is happening. More and more it is being seen that for developing countries that they did not have preview systems, satellite land monitoring systems are the most efficient ones. In the case that you had something in place which is more sort of a statistics, you can also use that.

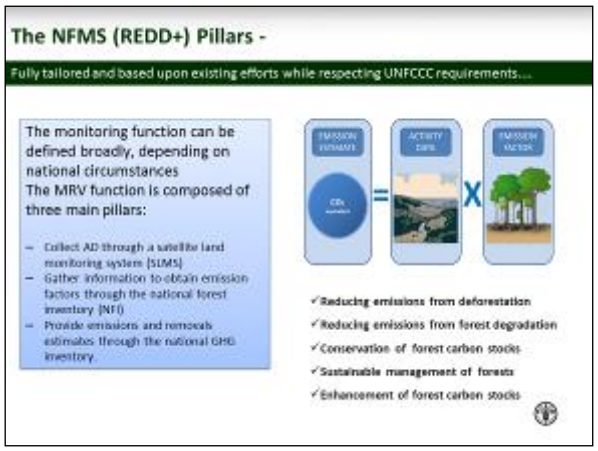
Then you have another core element which is in many cases already there in different stages of development or is not there, which is the National Forest Inventory where FAO had a lot of expertise. As usual, in the national forest monitoring and assessment program, it has been a long, long term support to countries to do that. Unfortunately, what FAO was facing while doing so was that we managed to do one exercise and then it was gone. There was no continuity. Again, we were talking earlier about what REDD+ gives an opportunity for, and we think that REDD+ gives an opportunity to keep continuing these surveys and repeating them which in the past was not possible. Maybe REDD+ can help us on that one.

Finally, within this MRV functions, the countries have to move these carbon estimates that come out from the combination of the satellite data and the national forest inventory data into the greenhouse gas inventory, which is part of the national communications or will be a part of the biannual reports. They have to understand also how to move this information into that, which does not mean that you have to move all your national forest monitoring information into that.

I would like to talk a little bit about what other functions your national forest monitoring system has. That relates to satellite remote sensing system that may encompass other land uses and they may help you to reach with other governmental exercises. You can have information systems that could help you to manage and work out all the information that you are collecting. You can engage

your community monitoring into that, nest that into it, and collect some of the information that is more difficult to be collected top down from bottom up. This is the challenge that I think some of the people in this room are facing at the moment; how to manage this situation without creating false expectations on the communities.

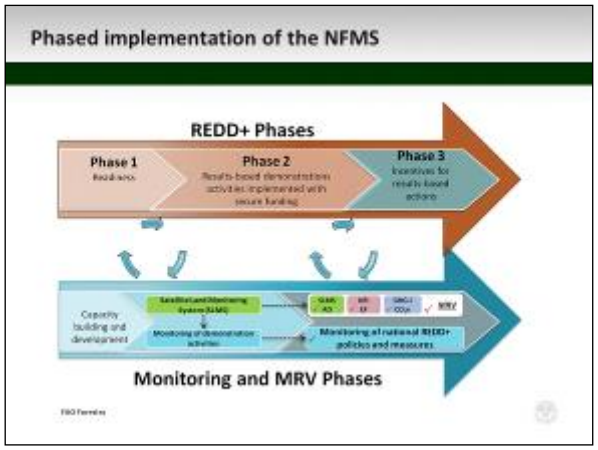
You can have other monitoring systems related or plugged into including biodiversity, including social and socioeconomic aspects and so on. It is up to you to define what you want to do. Obviously, these will relate with your SIS[5].



Coming back, why was conceptual framework was put in that way? It was also to help countries to understand how IPCC calculates, recommends, or provides methodologies and recommendations to you. Indeed, your activity data is your area data. Your emission factor is what you will gather through your national forest inventory. You combine the basic equation of IPCC, which is carbon estimate activity data per emission factor. It fits very well with the components that you have to build; your remote sensing monitoring system, your national forest inventory, more statistic ways gathering of data and finally, you just get an estimate that goes to the greenhouse gas inventory.

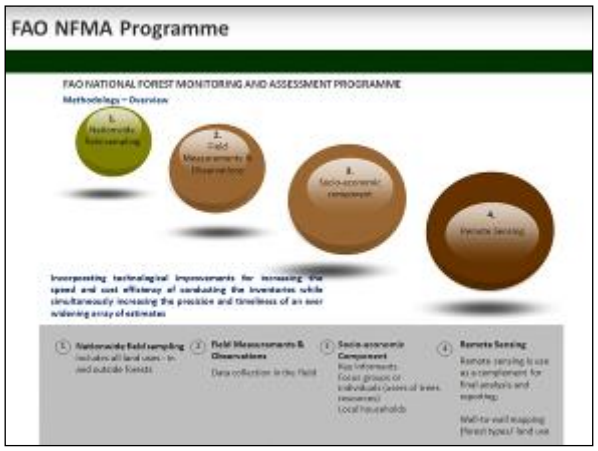
[5] System to provide Information on Safeguards

This is an example where these two functions are being conveyed in countries that we have been supporting. Here you see that a platform in Paraguay and DRC[6] where it is a free software developed based on Brazilian experience on the TerraAmazon[7] where countries can start adding all these layers of information and helping them to show that to others or to manage the information.

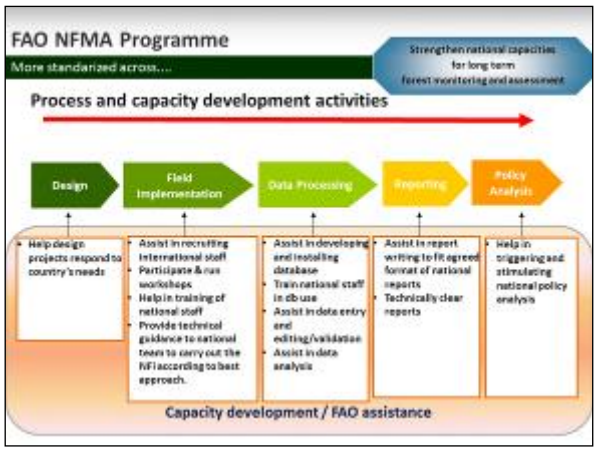


The way we are working on national forest monitoring systems is trying also to follow this phase approach that the REDD+ has. REDD+ has phase 1, phase 2, and phase 3. The readiness is encompassed in phase one and two and the construction of your monitoring system for forests will have to be sort of finalized in the first two phases. In the first phase, you create your capacities for the different elements. In the second phase, you start articulating the system. Basically, it also can be done through demonstration activities on a sub-national scale. In the third phase, you will have to have the system in place and running. This is where no one else or no one is yet there, although some countries are pretty advanced.

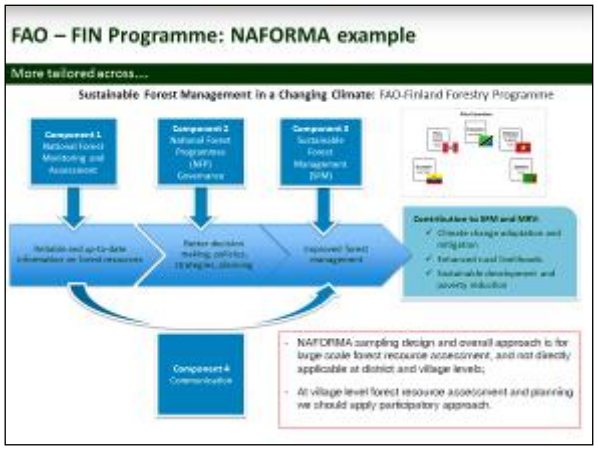
[6] The Democratic Republic of the Congo
[7] http://terraamazon.org/index.php/en

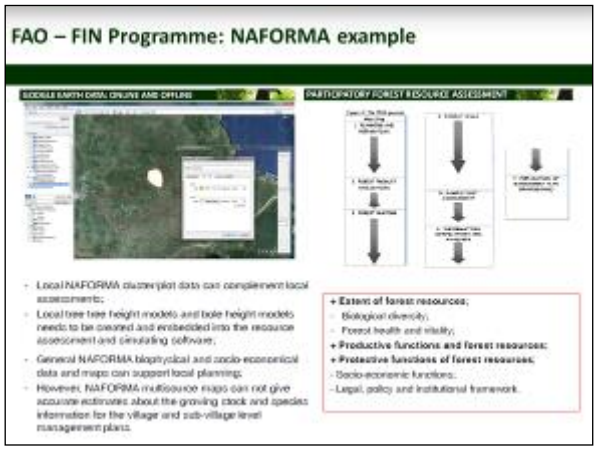


If you go to the philosophy of FAO National Forest Monitoring and Assessment program, which is this program that FAO had from previous years to support national forest inventories or monitoring and assessment, you see that it is very similar. You just have national field sampling, you have field measurements and observation, you collect socio-economic components, and you do the remote sensing. They order may be different, but at the end, the core things are the same.



Here you see more or less the flow. This program was conceived for strengthening national capacities for long-term forest monitoring and assessment. The part which was never achieved was the long term, because it was just one short exercise in many cases. Countries did not have resources to portrait further in most of the cases.



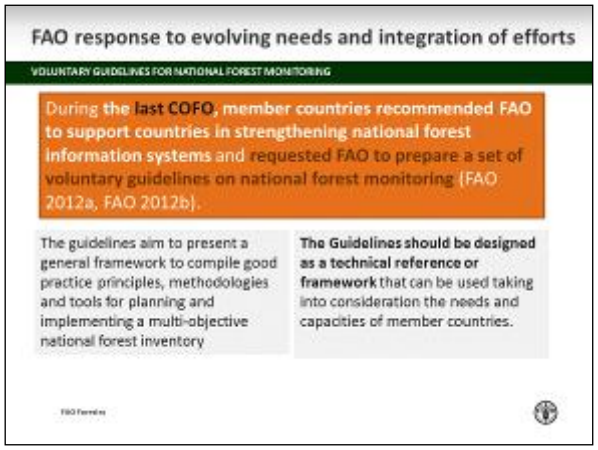


The contribution of all these programs together, it is shaping in a very nice way and we are interlinking things. For example, this other program I talked about will have these five countries which are supported by a Finnish corporation. It created tools that any other program can use. This is called the Open Foris[8] Initiative. This is a system that you can use to initiate from zero to almost an operative system by using free software and different tools.

[8] http://www.fao.org/forestry/fma/openforis/en/

You see that you have tools for design and planning; tools for data collection; tools for data processing and map production; then you have also dissemination and reporting; management of information; and also you can go down to local planning. I guess this demonstrates that one program can really provide tools for many others and the other way around and this is way we are working now.

We are integrating these three exercises in order to make sure that the support we are providing to the countries is indeed open. It is free to be modified and adapted. This software is, as far as possible free of charge. It is a system which is sustainable. It can be tested and it can be tailored. This is more or less what we are looking for.

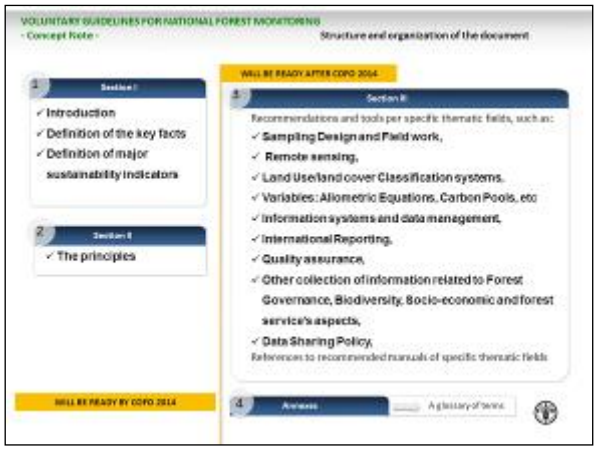


I will go to what has been the result of this reflection about what FAO has been supporting on forest monitoring. At COFO[9] last year, it was recommended that FAO support countries and strengthen national forest information systems. That is what we were already doing, so it was a good message from COFO. In that context, it was also requesting FAO to sort of prepare a set of voluntary guidelines on national forest monitoring system based on the lessons learned on the programs that we have.

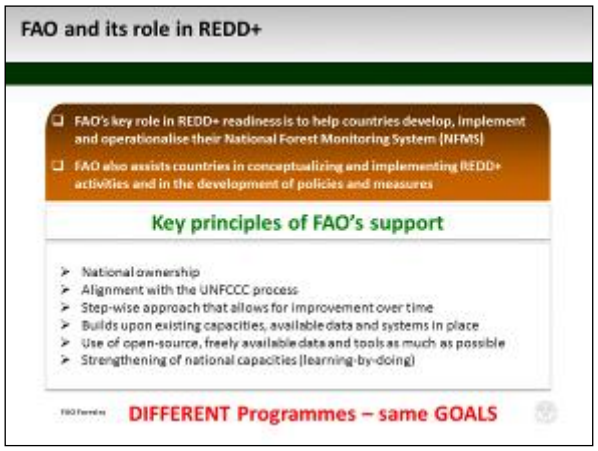
I do not like the word 'guidelines', but it is a very common word that is used by everyone. The aim is to present the general framework that compiles good practice principles, methodologies, and tools to implement and multi-objective forest national inventory or monitoring system. The guidelines in our view should be designed as a technical reference or framework, and not just as a prescriptive, I will say, guidelines. Some people understand guidelines in a more prescriptive way. These can be used taking into consideration the needs and capacities of the countries that we will support or will require support.

[9] Committee on Forestry 2012: http://www.fao.org/forestry/cofo2012/78120/en/

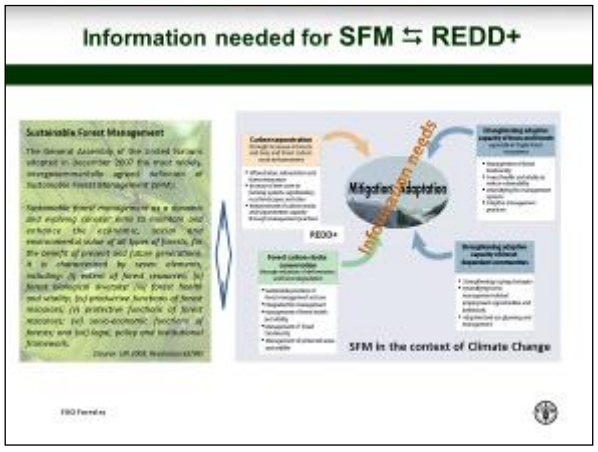
The target audience is forest operators such as state and local forest agencies; timber companies; indigenous people; all the stakeholders; policymakers such as government agencies dealing with forest conservation; environment and land use planning; development and extension agencies; civil society organizations; agencies and institutions; firms that are interested in acquisition services provided by forests; and international funding and environmental agencies. That is why I think that this should be seen as something which is not prescribed by providing a common framework.



The status at the moment is that we have developed one or two sections with an introduction of some key facts to frame the exercise and definition of the major sustainability indicators, assuming are the unique ones, and also some basic principles of what you have to take into account. After 2014, this will be presented to COFO and after that, we will level up the section three which is the main core of the exercise where we will try to articulate all the tools that we have available plus any other tools that we are being using and will be open to also have incorporations from other people or institutions that being working in this area and could contribute to this. Finally it has a glossary of terms. This is a sort of open and dynamic exercise for this section three. It will be a living section.

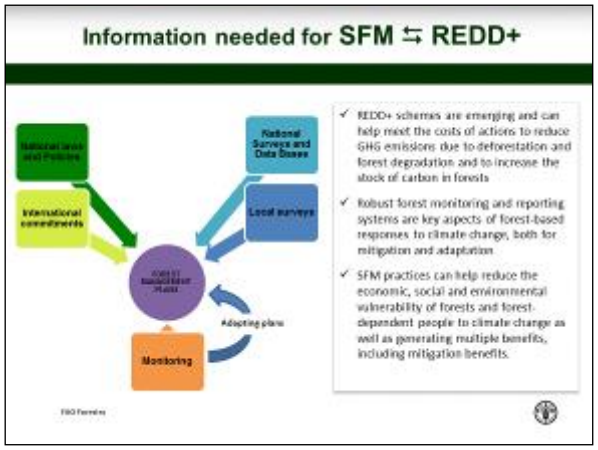


To go to the end of my presentation, I have to say that the key principles of FAO while supporting forest monitoring are national ownership; alignment in the case of REDD+ with the UNFCCC processes. Obviously, you are not going to construct the system only for UNFCCC reporting requirements, but you have to align with those if you want these systems to serve this purpose as well. A step-wise approach that allows for improvement over time: for us, this is extremely important, because we have to adapt to the existing capacities and to the speed at which countries can build new capacities. Build up on existing capacities and available data so that you do not just go and scratch whatever has been done before and start again from zero, but rather try to build on the top of what has been done so far. We use open source and freely available data and tools as much as possible so that you do not create an extra burden to the system. Obviously, one of the main objectives is to strengthen national capacities. However, we think that strengthening national capacities has a huge component on learning by doing within the country itself.



My last two slides are more related to SFM⇄REDD+ and the information needs. I will not repeat again the sustainable forest management definition. I included the second part here too to illustrate that there are diverse types of information that are needed for implementing sustainable forest

management. What is clear in the context of climate change is that REDD+ is one of the objectives, it is mitigation, but while you are managing your forests, you have to take into account also the vulnerability, the resiliency, and therefore the adaptation component of the picture. There are information needs and they go beyond the mitigation component and the carbon. Your system should address those needs as well, even within the context of climate change.



Finally, if I would like to synthesize this information needs, I would say that the core element that everyone is trying to put in place is forest management plans. Call it like that or call it something more fancy and new, but at the end, what you need to implement around this is your national laws and policies. You have some international sort of commitments that you have to take into account while doing so, but you need national surveys and databases to inform those decisions. You also need local surveys, because you cannot ignore what is coming from the ground. I think it is being said in the previous presentations that the local component on information is also extremely important. The challenge is how to match these things in a way that you do not unbalance the system you want to construct.

Finally, you do monitoring for all these. Once you do monitoring, what you do basically is

based on the analysis of your information to adapt your plans again. You move for an improvement on your decisions and planning. Three main conclusions from my side which may not be only related to the information or the monitoring, REDD+'s schemes are emerging. We all know that. We have been exposed to that for the last seven years, and can help to meet the costs of actions to reduce greenhouse gas emissions due to the deforestation and forest degradation and to the increase of carbon stocks. Yes, they can, but that is not the only thing that you have to take into account when you develop your policies and measures in your forest plans.

Robust forest monitoring and reporting systems are key aspects of forest based responses to climate change, both for mitigation and adaptation and even adaption is not being addressed in that context. I think we all domestically should keep this in mind. Finally, SFM practices can help to reduce economic, social, and environmental vulnerability of forests and forest-dependent people to climate change as well generate multiple benefits.

I would like to finalize saying that sustainable forest management, it is beyond what we want to achieve on REDD+. It is not an activity. I would like to emphasize that it is not an activity. Despite that we have in the list of the fifth activities, sustainable management of forests. Even if you take it in the same context as SFM, what you will realize is that it goes across the other activities. It is not, per se, an exclusive activity within the other four. I guess this is where the confusion comes from. It was a huge willingness to take on board the idea of sustainability in our forests. Therefore, it was included as one activity, but it is not exactly one single activity that you can relate to concrete results. It is more than that. This is what I think that has to be recognized.