

FCPF Carbon Fund Methodological Framework Discussion Paper #10 REDD+ Registry Systems for the Carbon Fund

WORKING DRAFT SOLELY FOR INPUT INTO AND DISCUSSION BY CARBON FUND WORKING GROUP
Posted October 2013; Original April 11th, 2013 by Facility Management Team¹

About this document: The FMT commissioned the development of this series of about a dozen topic-specific Discussion Papers (also known as “Issue Papers”) to serve as a common starting point for discussion on the Methodological Framework. The Papers were circulated January-April 2013 to Carbon Fund Participants and to over 100 experts who participated in REDD+ Design Forums which channeled input into the Methodological Framework. For each topic, the corresponding Issue Paper first presents background research and major approaches, and then suggests initial thinking on how to translate that topic into the context of the Methodological Framework of the Carbon Fund.

Because each paper presents a wide range of options, developed at the very beginning of the MF development process, the original drafts do not capture the discussions during Summer 2013 or reflect the final drafts of the MF. For this reason, FMT has added an introductory chapter to each issue paper during August 2013 entitled “FMT Update.” This aims to identify further approaches and considerations that emerged since the original paper, though it is not a summary of formal deliberations. Section II of each paper denotes the original Issue Paper. These Issue Papers reflect important context and options for the Carbon Fund of the FCPF and also contain useful information and considerations for policymakers and others designing REDD+ frameworks.

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¹ Support was provided by Forest Carbon, Markets and Communities (FCMC), a US Agency for International Development (USAID) funded program. The views contained in this document do not reflect the views of USAID or the US Government.

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I. FMT Update

1. Other topics considered in discussions on the Methodological Framework

Specifying only the essential functions of a registry. Avoiding the double counting and double claiming of the same Emission Reductions is a crucial part of carbon transactions. However, because the MF must apply to a variety of national and regional circumstances that may lend themselves toward differing registry systems, it is difficult and possibly unnecessary to specify what type of registry system the ER Program must use.

II. Original Issue Paper (April 2013)

1. Key Questions

1. What type of information will need to be managed and reported to meet the requirements of the Carbon Fund?
2. Do REDD+ countries need a National REDD+ registry system?
 - a) Is a national REDD+ registry system required to participate in the Carbon Fund? Under what conditions? What functions is the registry required to perform?
 - b) What are the functions that REDD+ registry systems could or should fulfill to meet the needs of countries?
3. What are the options for implementing a REDD+ registry system infrastructure to meet the needs of the Carbon Fund?
 - a) Which functions should be managed centrally by the World Bank or a mandated third party? Which should be managed by REDD+ countries?
 - b) What functions are already performed by existing systems, and which would need to be added somehow?
 - c) How can different registry systems interact and various implementation options be accommodated?

2. Relevant guidance

The Readiness package endorsement is an important milestone that FCPF countries will need to achieve in order to participate in the Carbon Fund. Concerning its implementation framework subcomponent, the Readiness Package establishes a criteria on *National REDD+ information system or registry* and poses the following diagnostic questions: *Is a national geo-referenced REDD+ information system or*

registry operational, comprehensive of all relevant information (e.g., information on the location, ownership, carbon accounting and financial flows for sub-national and national REDD+ programs and projects), and does it ensure public access to REDD+ information?

The ERPA term sheet when discussing the transfer of ERs, the ERPA term sheet states that: [...] *In the event that a registry system required for the transfer of ERs has not been set up at the time of the ER transfer to record the transfer of Contract ERs and/or Additional ERs under the ERPA, any transfer of ERs will be deemed completed upon receipt by the Buyer of:*

- *A final Verification Report verifying the amount of ERs generated and measured under the ER Program during a given Reporting Period and contracted for under the ERPA; and*
- *An invoice that documents the ER transfer and requests payment (ER Transfer Form), a template of which will be attached to the ERPA.*

In the event that a registry system required for the transfer of ERs has been set up at the time of ER transfer to record the transfer of Contract ERs and/or Additional ERs under the ERPA, any transfer of Contract ERs and/or Additional ERs will be deemed completed upon:

- *Receipt by the Buyer of a final Verification Report verifying the amount of ERs generated and measured under the ER Program during a given Reporting*
- *Crediting of such ERs to one or more registry account(s) nominated by the Buyer in accordance with the rules of the respective registry system.*

Any ER transfer will include all rights/titles/interests attached to such ERs (e.g., future ER credits to which such ERs may be converted). Any tCO_{2e} emission avoidance or removal by sinks from REDD+ activities under the ER Program and sold and transferred to the Buyer as Contract ER and/or Additional ER under the ERPA will not be used again by the Seller for sale, public relations, compliance or any other purposes (double counting).

3. Background

A “REDD+ registry system” is a repository for information on REDD+ actions preserving knowledge of facts, events, documents, maps, the details of ownership and value, etc. in a verifiable format. As such it is a tool that can help capture, process, store and report on all the relevant data and information related to REDD+ projects and programs in a way that is verifiable and accessible to various categories of stakeholders or end-users for decision making purposes.

From a country perspective a REDD+ Registry system can be a tool to facilitate the operation of a country’s REDD+ implementation framework (policies and rules and requirements) irrespective of where the ERs generated by REDD+ projects/programs are transacting within a market framework. Therefore, the definition of a country’s implementation framework processes and procedures is a prerequisite to registry development and roll-out.

From the Carbon Fund's perspective, the REDD+ Registry system is a tool to demonstrate/document the quality of the ERs generated and to support their "creation" (issuance), transfer of ownership, irrevocable retirement and most importantly ensuring that there is no double counting.

In the context of this paper, we will consider that there are two main components to a REDD+ registry system: a "REDD+ Project/Program database" and an "ER transaction registry".

We use "REDD+ Project/Program database" to designate the functions to support registering and reporting on REDD+ projects/programs, this includes the following:

- Managing official approvals and collecting/distributing information on REDD+ project/program proponents
- Collecting/distributing geo-referenced information on the location of REDD+ projects/programs
- Collecting/distributing information Reference levels at different scales
- Collecting/distributing information on MRV data to specific REDD+ projects/programs
- Collecting/distributing information on how safeguards are addressed and respected in specific REDD+ projects/programs
- Collecting/distributing information on CF payments and benefit sharing for specific REDD+ projects/programs

A REDD+ Project/Program database is likely to fulfill many different functions. As such it may be composed of many sub-components or modules and/or could link to other systems (such as MRV² systems or SIS³), and other functions to support efficient handling of REDD+ information between the government and REDD+ participants (see figure 1 below). A registration platform can also promote environmental integrity, transparency and support independent verification and validation. Many governments, are starting the process of designing and building registration platforms (see annex). The figure below gives an example of what such modules may look like based on relevant guidance.

The use of "ER transaction registry" in this paper refers to the system that supports:

- The serialization of ERs that have been issued under a recognized standard or framework,
- Account holders systems to manage positions and settlements for ER transactions,
- Accounting for non-permanence risk management (buffer reserves)
- Reporting, and
- The linking to other ER transaction registries⁴.

An ER transaction registry handles the process of creating (i.e. issuing) offsets units with unique serial numbers and supporting the transfer of ER units between account holders within the registry and to other linked trading registries.

² Measure, Report, Verify

³ Safeguards Information System

⁴ In some cases, a link to i) a trading platform and ii) a GHG reporting tool will be implemented. Both are out of scope of this document

Figure 1. Building blocks of a registry system (modules)

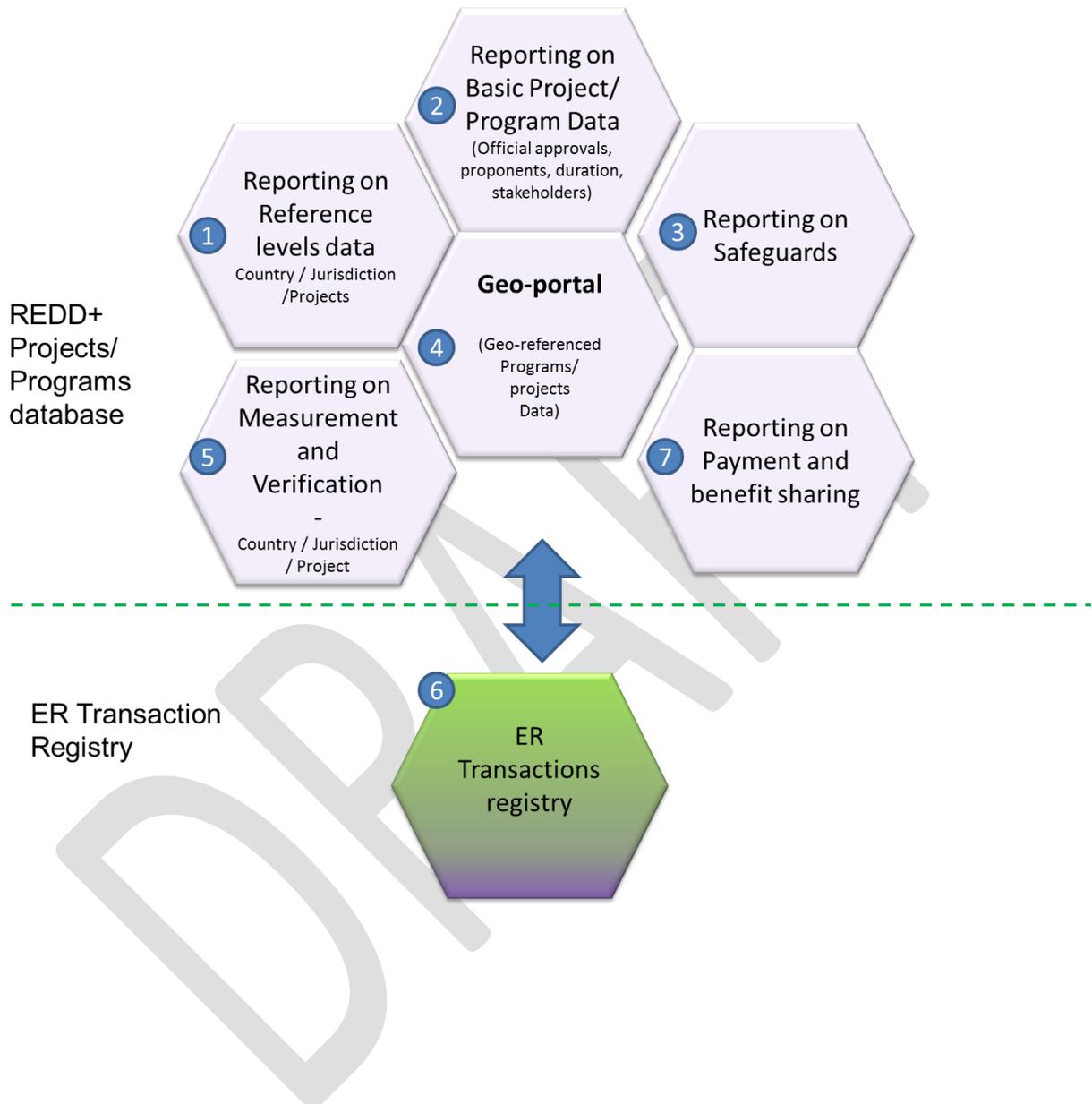


Table 2 Components of a REDD+ Registry System and Functions

REDD+ Registry System	
REDD+ Project/Program database*	ER Transaction Registry**
<ul style="list-style-type: none"> • Managing government approvals, • Collecting/distributing information REL and MRV data to/from specific activities • Collecting information on how safeguards are addressed and respected in specific activities • Collecting information on financial flows (performance based payments) and benefit sharing 	<ul style="list-style-type: none"> • Issuance and serialization of ERs • Account holders systems to manage positions and settlements for transactions, • Accounting for non-permanence risk management (buffer reserves) • Reporting, and • Linking to other registries

* Likely to be under REDD+ country responsibility (see Options for the Carbon Fund below)

** Could be either REDD+ country or FCPF Carbon Fund responsibilities (see Options for the Carbon Fund below)

4. Approaches of Major International Initiatives

The implementation of the Kyoto Protocol's flexibility mechanisms led to the creation of registry infrastructure to support the management of "carbon credits". In this system each Annex I country registry as well as the CDM registry are linked through the International Transaction Log (ITL). To allow for this inter-linkage, the UNFCCC adopted a Data Exchange Standard (DES) to which all linked registries must comply. In the case of European Member States a common single platform was created, where each Member State administrates both its section of the EU Registry (accounting for the EU ETS) and also its own National Kyoto Registry (accounting for country level commitments as a Party to the Kyoto Protocol).

International offset schemes such as the CDM and voluntary offset schemes such as the VCS rely on a centralized project database and ER transaction registries. The project database and the ER registry are distinct yet integrated. In the case of existing project mechanisms (CDM, VCS), the issuance process involves the confirmation of the completeness of all validation and verification documents and the other required documentation submitted by project/program proponents, governments, and/or auditors and stored in a project database. Such confirmation, supported by an independent verification, is centralized under the CDM (undertaken by the Executive Board) and decentralized under the VCS (undertaken by the issuing registry administrator).

The table below summarizes the functions and information managed by such systems.

Table 1 CDM and VCS data management systems and functionalities

Issue	CDM	Voluntary markets/VCS	System component
Official approval	Host country letter of approval recoded in CDM project registry	Not required	Registration platform (CDM information system or VCS project database)
Information on safeguards	Host country confirmation of contribution to sustainable development included in letter of approval; no further requirements	Not required	
Stakeholders consultation	The Global Stakeholder Process ⁵ is conducted by displaying the PDD on the UNFCCC or designated operational entity's website for a period of 30 days, during which time Parties, stakeholders and UNFCCC accredited observers may make comments. These comments are also made publicly available (3/CMP.1, Annex, paragraph 40(b) - (d)).	Global stakeholder consultation required. Comments received shall be posted on the VCS website	
Information on benefit sharing	Not required	Not required	
Information on Emission Reductions expected and generated	<ul style="list-style-type: none"> - Scale and Scope, Methodology used, - Project Design Document (including monitoring plan) - Validation report - monitoring report - verification report 	<ul style="list-style-type: none"> - Scale and Scope, Methodology used, - Project Design Document (including monitoring plan) - Validation report - monitoring report - verification report 	
Issuance	Serialized CERs issued for each project by the sole CDM Registry.	Project Database generates serial numbers. Elected issuing registry issues the units.	ER registry (CDM registry + Kyoto registries system linked through the ITL OR Project Database + VCS registries)
Transfer	CERs move from one account to another	VCUs move from one account to another	
Cancellation / Surrendering / Retirement	CERs are transferred to a dedicated account, in the holding registry where the transfer is instructed.	VCUs irrevocable transfer to a retirement account, in the issuing registry. Project Database is notified.	

⁵ The global stakeholders process is distinct from the requirement to consult local stakeholders on the impacts of a CDM project in the area in which it will be developed, which must be conducted and documented by project participants as a requirement for the validation of all project types. The documentation on this local stakeholder consultation forms part of the material assessed by the DOE in conducting validation (together with the PDD, documentation on the environmental impacts of the project, the letter of approval from the Parties involved and any comments received under the GSP).

What are the minimum data management requirements of the Carbon Fund?

Ensuring that there is no double counting

The FCPF Carbon Fund REDD+ countries and participants will be required to guarantee that there is **no double counting**. We can identify three different forms of double counting: (1) multiple interventions claiming the same ER, (2) the same ER being recorded/issued more than once, (3) the same ER being sold to more than one buyer.

In the specific case where a country is implementing REDD+ at the national level and accounting for ERs generated at such scale (ER-Program implementation area is national) OR in the case where a country only has one REDD+ project/program, then evidence that the same ERs are claimed by the same intervention is straight forward.

However if sub-national activities are allowed to generate ERs under its regulations then a REDD+ country must demonstrate that no two project/programs are claiming the same ERs. This involves ensuring that no two approved project/program overlap in scale and scope⁶. This can be done by establishing **an official approval process** for REDD+ project/program looking to generate ERs and registering the **geographical perimeter of all approved REDD+ projects and programs** as well as the **REDD+ activities and carbon pools that are accounted for in each project/program**.

These “non-double counting” checks are performed for the CDM by the Executive Board (however these are restricted to CDM projects), and under the VCS by the Issuing Registry Administrator (all-standards are considered).

If multiple sub-national activities are allowed to generate ERs under its regulation and if the country intends to have more than one buyer of ERs (a desirable outcome from the perspective of the Carbon Fund), then it must demonstrate that the **same ER is never recorded/issued more than once**, and that **the same ER is never sold to two parties**⁷.

Ensuring that the same ER is never created (or issued) more than once can be done by:

- ensuring that ERs creation is based on a verification report verifying the amount of ERs generated and measured under the ER Program during a given Monitoring Period,
- serializing those issued ERs and registering the monitoring period associated to the serial numbers. Serial numbers can typically include information on project/program code (allowing for

⁶ Scale refers to the geographical perimeter while scope refers to the REDD+ activities and carbon pools that are being accounted for.

⁷ ERs can be traded from one party to another, however there must be a sole owner of a single ERs at all times (i.e. no rupture or uncertainty in the chain of custody)

identification of a project/program in the registration platform and the associated documents); start/end of monitoring period (vintage), standard, issuing registry and methodology.

Ensuring that the same ER is never sold to two parties can be done by registering all transactions and associated information: trading partners and their respective account identifiers, dates of delivery and accounting, volume, standard, serials of traded ERs, purpose (e.g. tranche A or B). The ER transaction registry must therefore follow generally accepted accounting principles, and especially the double-entry bookkeeping⁸.

An ER transaction registry can greatly facilitate this process by ensuring that ERs are transferred from the seller to the buyer's registry account(s). In the absence of an ER transaction registry, accounting for all transactions becomes very challenging and can only be envisaged if there are very few transactions (as suggested in the ERPA terms ER Transfer Form) and a transparent and comprehensive reporting from issuance to retirement.

Other requirements

As per the ERPA term sheet ER-Programs will be required to submit a letter of approval by the relevant authority in the REDD+ country; a benefit sharing plan; the sub-arrangements between the seller and the sub-entities required to implement the ER-program (if relevant); and a safeguards plan required as a result of the buyer's environmental and social safeguards due diligence.

Further, according to the R-Package diagnostic questions, it would be desirable for REDD+ countries to provide public access to all the relevant information on sub-national and national REDD+ programs and projects.

The VCS project database and CDM information system are examples of systems that currently facilitate the management of these types of documents and their public dissemination.

5. Options for development and operation of registry systems for the Carbon Fund

Having acknowledged the data management requirements for ER-Programs, we come to the question of how to develop and operate a registry system for the Carbon Fund.

With regard to REDD+ registry system development REDD+ Registry System options can be grouped in 4 blocks:

1. **"De minimis" Registry system.** This is the simplest option and would function as follows:

⁸ Under the double-entry bookkeeping system, the full value of each transaction is recorded on the debit side of one or more accounts and also on the credit side of one or more accounts. Therefore, the combined debit balance of all accounts always equals the combined credit balance of all accounts.

- a. Relevant REDD+ projects/programs documentation is transferred to the Carbon Fund and posted on both FCPF and REDD+ country designated websites⁹.
 - b. ERs are “created” by the World Bank using CARS¹⁰ (or third party system) and transferred to CF participants’ account in CARS (or in third party system).
 - c. Tranche B participants ERs are irrevocably retired in participant’s CARS account (or third party system).
 - d. Tranche A participants ERs may be cancelled in participant’s CARS account (or third party system) and created in another ER registry.
2. **Use existing registry systems.** There are many existing registry systems that could be used to support the required functions (see table 4). Further the FMT acknowledge that some countries will want to issue ERs directly under an existing standard and therefore use this standard’s registry system. In the latter case it will be necessary to ensure that ERs meet both the requirements of the FCPF CF and of that other standard and that issued units bear the “tag” of the FCPF CF. The use of existing registries would function as follows:
- a. Relevant REDD+ projects/programs documentation is registered in an existing project/program database (UNFCCC-CDM, Annex 1 registries or VCS or other) and made available to the public¹¹.
 - b. REDD Country sellers and buyers use existing ER transaction registry and open account as any account holder would do.
 - c. ERs are “created” in REDD+ country seller’s account and transferred to buyers based on the competent authority’s orders.
 - d. Tranche B participants ERs are irrevocably retired in participant’s account.
 - e. Tranche A participants ERs may be transferred to other account in the same registry or in linked ER registries.
3. **Outsource Registry system administration and Registry IT development to a third party.** This may include some or all of the data management functions (see figure 1), as such there are many variants of this option. These might include a formal request to an international organization to provide registry services for a fee. A private service provider or other third party providing the infrastructure but operated within country. REDD+ countries could share outsourcing, development and operating costs for a common infrastructure. For the latter

⁹ This option will only guarantee no double counting in situations where a REDD+ country is implementing REDD+ at a national level OR only has one project/program generating ERs AND all buyers are coordinating their purchase agreement so that there is no double counting. For example, REDD country A signs an ERPA for 40% of total ER-Program ER volume to FCPF and another ERPA for 60% to another buyer; verification (number of ERs and associated set of documentation) is shared by the two buyers, FCPF takes its share (creates 40% in CARS), Other buyers takes its share (creates 60% in its own system).

¹⁰ CARS may not be used for non FCPF CF transactions

¹¹ Additional information that cannot be managed by existing systems could be posted on FCPF or REDD+ country websites or existing systems could be modified to fulfill the additional needs of the Carbon Fund.

variant, the World Bank could support the elaboration of the technical specifications for such a system and assist with a common procurement process.

4. **REDD+ countries Buy or Build and operate a REDD+ registry system.** The development would probably be based on existing solutions or software elements. This may include some or all of the data management functions (see figure 1) as such there are many variant of this option. Countries that wish to develop their own infrastructure and operate their own systems could be provided with standard minimum technical requirements and guidelines by the World Bank to ensure that their national REDD+ registry systems are comprehensive of all relevant information and are managed and periodically updated according to set administrative procedures, audited annually and accessible to the public (through internet or other less preferable means).

The table 4 below outlines the options for each module outlined in figure 1 and identifies existing solutions.

Text Box 1.

The World Bank's Climate Asset Registry System and the issue of linking between registries

The World Bank Carbon Finance Unit has developed its own Carbon Asset Registry and Reporting System (CARS) to manage the issuance and initial custody of ERs. CARS enables the Carbon Finance Unit to perform timely and accurate recording, tracking, allocation and distribution of emission reductions (ER) or carbon assets purchased on behalf of the private and public sector participants ("Participants") of the carbon funds and facilities ("Carbon Funds") managed by the World Bank in its role of Trustee. The CARS system has managed over 5000 carbon transactions to date.

CARS could fulfill the functions of ER registry for the Carbon Fund, but it is important to note that CARS can only manage Carbon Fund transactions and only the creation (issuance) and retirement of ERs and initial distribution to the CF participants. Non Carbon Fund transactions or secondary transactions would have to be dealt with in other systems.

Acknowledging that Tranche A Fund participants will want to convert their ERs into tradable units under existing standards, the FCPF CF will have to establish a reliable accounting and reporting process where ERs are converted to such tradable unit without double counting. CARS has a history of facilitating conversion to 3rd party issued credits. Existing registry infrastructure such as the Annex 1 registries and VCS registries also have this capacity through IT linking and reconciliation respectively.

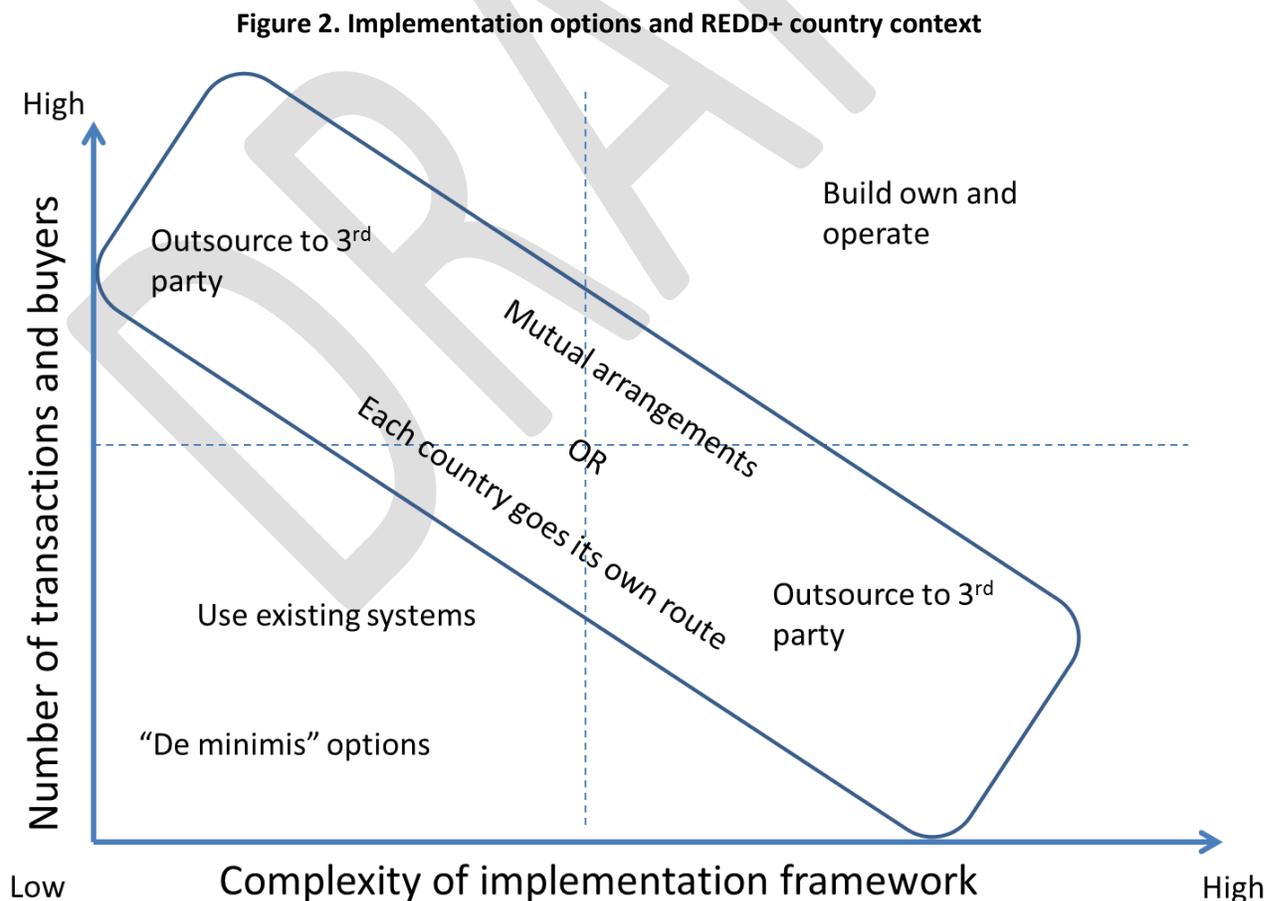
Registry systems can be linked under 4 main mechanisms:

1. Direct linking (Kyoto Registries through ITL real-time reconciliation, and using DES)
2. Cancel in one scheme / issue in the other scheme (e.g. cancel AAU in a Kyoto Registry and issue VCUs in a VCS Registry)
3. Correspondent banking (*Nostrum Vostro*, e.g. VCS registries), with ex-post reconciliation
4. Indirect linking "hybrid" (e.g. EU ETS and Australia in the interim period)

While they require robust governance, administration and reporting processes, the data management systems or databases that are required to capture, process, store and report on all the relevant data and information linked to REDD+ do not necessarily have to be particularly sophisticated. On the one hand, simple systems can be devised where information can be made public and regularly updated manually on an existing website. On the other hand highly secured IT infrastructure can be created to manage user accounts and produce real time statistics. The proper balance between simplicity and sophistication will depend on two variables:

1. **The complexity of the implementation framework.** The number and size of programs envisaged, their frequency (how many new programs per year), and the existence of “nested” projects/programs.
2. **The number of buyers and number of transactions.** To mitigate risks of errors or fraud, the ER registry administrator will need to have very solid security protocols and internal control procedures. The management of ERs is especially sensitive to mistakes or potential security breaches.

Figure 2 below displays a very basic and generic analysis of appropriate options based on how REDD+ fare vis-à-vis those two variables. An assessment of the risks and opportunities may be needed to assess the proper level of sophistication and it will likely differ across REDD+ countries.



Concerning registry system operation it will be important that the following 3 roles are fulfilled:

1. The *Registry Administrator* manages the system according to fixed procedures or regulations and executes the orders of the competent authority (and in some cases of account holders) concerning the registration of project developers, the approval of REDD+ projects/programs, the creation (issuance), transfer and retirement of ERs. The administrator receives a mandate to carry out its mission, it should not be involved in the development of REDD+ projects or programs and should not make decisions.
2. The *Competent Authority* makes decisions and gives orders to the registry administrator concerning the registration of project developers, the approval of REDD+ projects/programs, the creation (issuance), transfer and retirement of ERs.
3. The *Account Holder* gives orders to the registry administrator concerning the transfer and retirement of ERs in his possession.

These roles can be divided between REDD+ countries, and a centralized registry system administrator (the World Bank as trustee and potentially Third parties). Regardless of the choice all key roles and data management functions need to be performed. It will therefore be necessary to determine who will be in charge of registry system administration, who will be the competent authority and who will hold accounts in the ER transaction registry. It is important to consider that this division of labor could vary from country to country depending on country contexts and capacities. Table 3 below provides details the division of labor between actors under the different development options.

Table 3 Division of labor in Registry System Development and Operation

Role	Option 1. « De minimis » registry system	Options 2. Use existing	Option 3. Outsource	Option 4. Buy or build and operate
Registry Administrator	World Bank	Existing registry administrator	Private service provider*	REDD+ country
Competent Authority	World Bank	World Bank or Standard administrator	REDD+ country	REDD+ country
Account Holder	CF participants only	REDD+ country and third parties (including CF participants)	REDD+ country and third parties (including CF participants)	REDD+ country and third parties (including CF participants)

*A REDD+ country could choose to only outsource the IT infrastructure but maintain administration functions.

Those countries wishing to play the role of “Registry Administrator” under option 3 or 4 should consider the following:

- If and how they will make information published by the National REDD Registry System enforceable upon third parties (especially regarding REDD+ ER units ownership at a given date);
- How the National REDD Registry System shall account for insurances against some risks, such as leakages or non-permanence (e.g. partial issuance or national buffer reserve);

- How they will legally establish the National Registry’s role and liability, as well as which entity is liable to administrate it;
- How they will create a governance rules that avoids conflicts of interest (the entity which administrates the registry should not be part of any REDD+ ER units negotiation, in order to remain fully independent);
- How they will establish accounting rules for companies holding REDD+ ER units¹²;
- How they will establish clear tax rules in order to avoid fraud
- How they will establish robust “Know Your Customer” procedures to ensure project/program proponents and other account holders’ honorability, as well as apply rules for the prevention of money-laundering and terrorism financing.

Table 4 Development and operation options for each registry system module

Option/ Module	Official approvals	Safeguards	Geo-referenced program data	Reference Levels and MRV modules	Benefit Sharing	ER transaction registry
Option1. De minimis registry system	FCPF/ REDD country website	FCPF/ REDD country website	FCPF/ REDD country website	FCPF/ REDD country website	FCPF/ REDD country website	FCPF/country website REDD
Option2. Use existing¹³	UNFCCC information system or VCS project database	World Bank safeguards database, SES, CCBA, etc.	VCS project database, other standards database and Privately operated Environmental Registry	UNFCCC information system or VCS program database (only document based)	If available	World Bank CARS, Annex 1 country registry, Other REDD Country registry VCS or other standards registries, UNFCCC registry, Winrock offset registry
Option3. Outsource	Markit, APX	?	Many existing proprietary options	ESRI, Winrock, etc.	Markit, APX	Markit, APX, or even custodians or banks
Option 4. Buy or build	DRC, Ecuador, Colombia	REDD+ Countries’ SIS	Many existing open source options	FAO/INPE system for UN-REDD countries, WRI Global earth watch	Costa Rica or Mexico PES databases	Many existing open source DES compliant software (e.g. Community registry software used by EU) OR non-DES compliant solutions (e.g. the Climate Registry)

¹² For example: what value shall be given to these REDD+ ER units if such company gets bought, in case of bankruptcy or in the company’s balance sheet?

¹³ Requires appropriate agreements or regulation

Advantages and Disadvantages of Proposed Options

Table 6. Advantages and disadvantages of proposed options

Option	Advantages	Disadvantages
Option 1. “De minimis” Registry System	<ul style="list-style-type: none"> • Simple, cheap and easy to implement 	<ul style="list-style-type: none"> • Sensitive to mistakes • Less transparent, less reliable • Difficult to guarantee environmental integrity if many subnational project/programs are generating ERs sold to multiple buyers • CARS may not be used for non FCPF CF transactions
Option 2. Use existing registry (REDD Country and buyers are account holders in an existing registry)	<ul style="list-style-type: none"> • Ready to be used, no development needed • Tested and proven infrastructure and administrative processes • Less costly than other options • Minimize risks and complexity • Already / rapidly available • Linking may be facilitated • Access to a market demand may be facilitated 	<ul style="list-style-type: none"> • No possibility to change/adapt (legacy) - especially reporting • Country doesn't manage its GHG emissions and ER units (sovereignty) • Information would potentially be scattered across repository and harder to consolidate
Option 3. Outsource Registry administration and IT	<ul style="list-style-type: none"> • Turn-key Registry Administration and system (IT) • Shorter development process building on experience of third party • Potential to synergies in development and operation (common developer/operator) • Linking may be facilitated • Access to a market demand may be facilitated • Reduce risks and complexity 	<ul style="list-style-type: none"> • Limited but existing customization possibilities • Potentially costlier depending on service provider
Option 4. Build Own Operate (BOO)	<ul style="list-style-type: none"> • Design your own specifications. Potential to add custom functionalities allows for flexibility for countries to better support their internal administrative processes. • benefit from existing open source software or in country software • Increased national ownership and capacity • Provide end-users support • Potentially creates a “use” option for other REDD Countries 	<ul style="list-style-type: none"> • Requires IT and administrative capacity to be developed and properly managed • Costly development process and learning curve • Requires resources to improve, maintain, host and establish user support

6. Recommendations for the Carbon Fund

In general and to the extent possible, the FMT recommends that the FCPF CF be open to multiple options to accommodate the different REDD+ countries' needs.

Whatever option is chosen, the FMT recommends that reporting requirements and reporting formats be designed before the registry systems are put in place. This includes reports to the public, to specific stakeholders and account holders, to the FCPF, to the Central and national administrators, etc.

Specific recommendations for REDD+ Project/Program databases

The FMT recommends that countries wishing to participate in the Carbon Fund consider outsource REDD+ Project/Program databases administration and IT development to a third party service provider (option 3), or Buy or Build and operate a REDD+ Project/Program database (option 4) if they plan for interventions in other sectors or a complex implementation framework (e.g. nested projects).

The use of existing registry infrastructure (option 2) should be considered (e.g. VCS or CCBA project databases). However efforts should be made to minimize having scattered information across multiple repositories.

In the specific case where a country is implementing REDD+ at the national level and accounting for ERs generated at such scale (ER-Program implementation area is national), or in the case where a country only has one REDD+ project/program with the FCPF carbon fund, then the "De minimis" option (option 1) may be sufficient.

Specific recommendations for ER Registries

As a default option and in cases where the "De minimis" registry option is adequate for a REDD+ country, the FMT will use its Carbon Asset Registry and Reporting System (CARS) to manage the creation (issuance) and initial custody of ERs, but only for FCPF Carbon Fund participants. Third parties will need to make their own arrangements.

In cases where a country expects a large number of transactions and trading partners and/or a complex implementation framework (e.g. nested projects), the FMT recommends that REDD+ countries outsource ER transaction registry administration and IT development to a third party service provider. In an effort to reduce development and operating costs, it is recommended that REDD+ countries explore the possibilities for a common outsourcing of ER transaction registry development and operation. World Bank could support the elaboration of the technical specifications for such a system and assist with a common procurement process.

The use of existing registry infrastructure is also acceptable (e.g. Annex 1 registries or VCS registries). In cases where countries would like to issue ERs under an existing standard (e.g. VCS), it will be necessary to ensure that ERs meet both the requirements of the FCPF CF and of that other standard and that issued units bear the "tag" of the FCPF CF. The VCS already provides the possibility of "tagging" VCU that meet other standards.

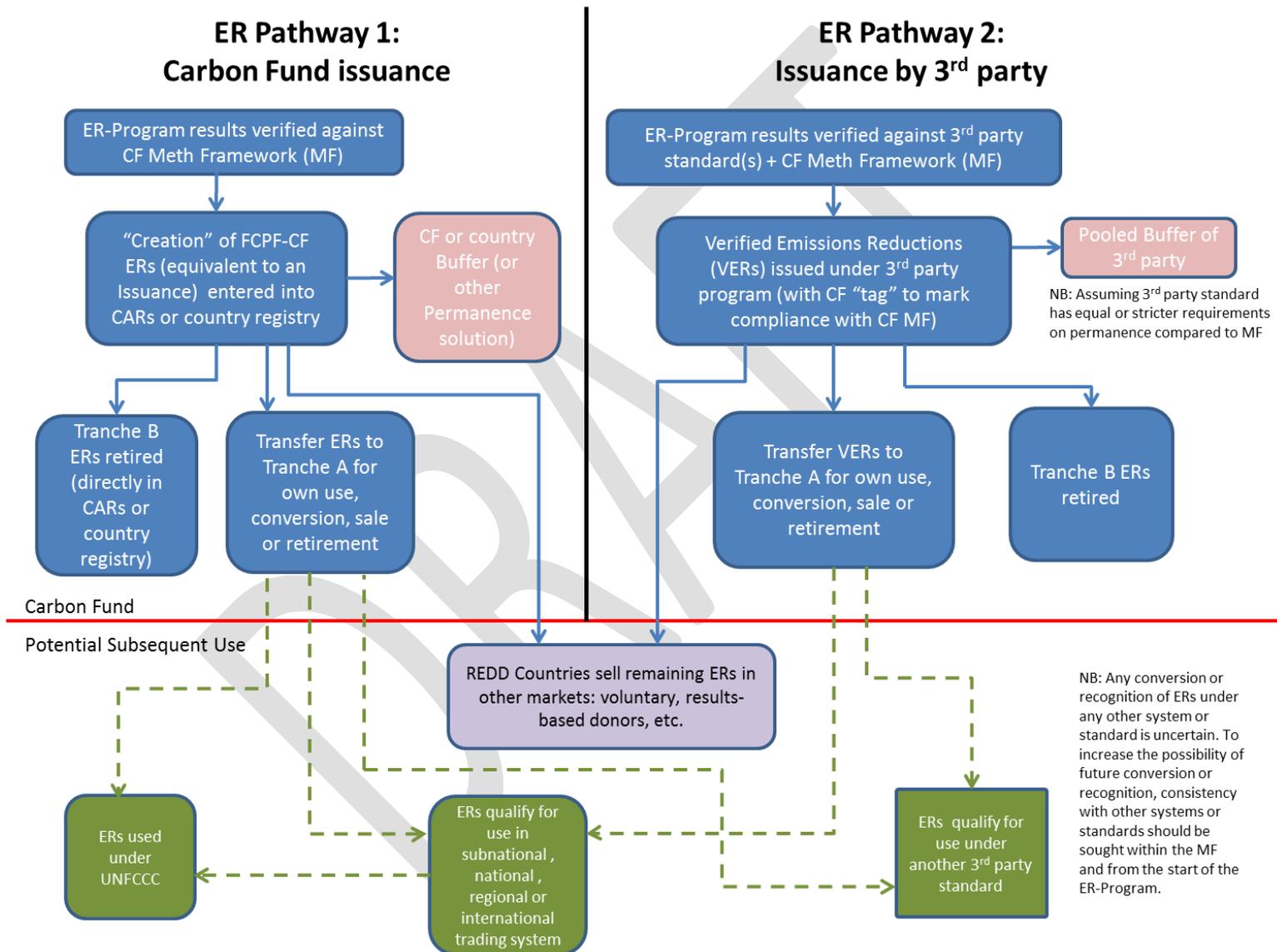
The FMT also acknowledges that some countries may want to develop their own ER registry that allows for harmonization and linkages with many other systems and not only the Carbon Fund, and a potential

future international REDD+ mechanism. Indeed a large volume of trade can justify that a country develops the expertise and supports the development and management costs of its own platform. However, this will not be the case of most REDD+ countries. In this case the FMT recommends that REDD+ countries be provided with standard minimum technical requirements and guidelines (or recognize existing ones) for reliable accounting and reporting process for ERs to be transferred to Carbon Fund participants.

Based on these recommendations for ER registry development and operation as well as on discussions during the first REDD Design Forum and March Working Group meeting, the FMT has made a preliminary identification of ER pathways for the Carbon Fund from issuance to retirement: a first pathway where the Carbon Fund issues ERs, and a second pathway where a 3rd party issues ERs. The figure below describes the pathway of ERs under these two scenarios.

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Figure 3. Early thinking on ER pathways for the Carbon Fund



Annex: Approaches of selected REDD+ countries/jurisdictions

Acre State, Brazil

Brazil's Acre State is one of the world's most advanced jurisdictions in establishing a complete implementation framework for REDD+. In 2010, the Acre state legislature passed and signed into law the System of Incentives for Environmental Services (SISA) in order to establish a system of incentives for a range of environmental services, including forest carbon. In this law, ERs ownership is not associated with land tenure but rather belongs to those who have produced the emission reduction by taking a specific action. Consequently ERs are treated as a service, denominated in tCO₂, which can be contracted and traded in the market. SISA provides the structure and functions for a state system which explicitly allows for harmonization and linkages with a future national system, other sub-national systems, and potential future international REDD+ mechanism. Acre signed an MOU with California in 2010 to develop principles and criteria for the inclusion of REDD in California's carbon market. Acre is also discussing similar agreements with the States of Sao Paulo and Rio de Janeiro.

Acre's Climate Change Institute is in charge of validating methodologies for registration and certification; credentialing enterprises to operate projects within the scope of SISA and in accordance with its regulations; conducting the pre-registration and registration of action plans and projects; issuing emissions reductions certificates for ERs, in compliance with the targets established in registered action plans or projects.

Acre has reached an agreement with the Markit Environmental Registry to provide infrastructure and technical support to the State of Acre to jointly develop a customized, secure online registry facility for efficient and transparent issuance of credits and for tracking ownership and retirement of credits. In addition, the Markit Environmental Registry will establish connectivity to link Acre's numerous partners and facilitate transactions in Brazil and internationally.

Mexico

In its 2010 REDD+ vision document, Mexico set out (amongst others) to (1) design a unique registration system for emissions reduction certificates that lends certainty to emissions transaction mechanisms and to (2) develop a proposal for a domestic market mechanism and its legal framework (including basic criteria such as transparency, verification, guarantees, credits, definition of carbon ownership, definition of benefit sharing, and common currency).

According to the Climate Change Law passed in July 2012 (LGCC for its name in Spanish) the Ministry of Environment and Natural Resources shall integrate the Registry of emissions generated from stationary and mobile emissions sources that are identified as subject to reporting. The elements for the integration of the Registry are:

- Gases or greenhouse compounds that must be reported for the integration of the Registry;
- The thresholds to report direct and indirect emissions;
- The methodologies for calculating direct and indirect emissions that must be reported;

- The monitoring, reporting and verification system to ensure the integrity, consistency, transparency and accuracy of the reports;
- The relationship (if any) with other federal or state records of emissions.

The LGCC establishes that persons or entities carrying out projects or activities that result in the reduction or mitigation of emissions may enter this information in the Registry. The specific procedure will be established in a specific regulation for this topic. This regulation will also include de measures to avoid double counting of emissions reductions that will be verified in the country.

The National Climate Change Policy still needs to be developed following the principles established in the Law and in the National Climate Change Strategy being developed, so it has yet to be determined how Mexico's GHG registry system will manage REDD+. It could either manage it as a separate yet compatible system under CONAFOR's responsibility or be fully integrated into the National Registry for GHG emissions.

Democratic Republic of Congo

Recently investments have been made in DRC on REDD+ projects targeting the voluntary carbon market. As of June 2011, more than 10 such projects were at early stages of development across the DRC, involving a variety of actors. It is likely that projects targeted at markets (voluntary and possibly compliance) will co-exist with projects supported by the National REDD+ fund or other public finance not generating compliance-grade assets.

As a response to this emerging reality, the Ministry of Environment has developed regulations and procedures for the national approval of REDD+ projects ("Homologation"), including the establishment of an on-line REDD+ national registry to support the operationalization of these regulations. These regulations determine the conditions under which project developers (private firms, NGOs, Church groups, local communities and government agencies) can market emission reductions from REDD+ on international markets. The administrative procedure is meant to ensure that:

- project developers and their financial partners undergo due diligence and anti-money laundering controls thus mitigating the risks of illegal activities;
- projects implementing the same REDD+ activity do not overlap spatially thus avoiding "double counting";
- projects are approved by the multi-stakeholder National REDD Committee thus promoting their legitimacy;
- projects are validated under internationally recognized carbon and socio-environmental standards (VCS, CCBA, CAR, UNFCC) within 4 years of national approval thus preventing speculation and promoting environmental integrity as well as ensuring respect for safeguards ; and finally
- projects report periodically on verified results, carbon transactions and lessons learned, thus contributing to the national strategy development process through a better understanding of the feasibility of REDD+ under different project business models and the challenges of implementing REDD+ on the ground.

To support the administrative process a "National REDD+ Registry" was created. To mitigate opportunities for corruption the process is fully digitalized and based on self-reporting online. All assessments and verifications are performed by independent third parties with password protected rights. To promote full transparency and environmental integrity all the information is directly

integrated into the National Forest Monitoring System used to display MRVed results (activity data and emission factors) and is available to the public (www.rdc-snsf.org). The procedure requires minimum intervention by the State improving the prospects for effective implementation of this regulation given the government's weak capacity.

Through its implementation framework and associated registry, DRC does not intend to set standards or conduct validation/verification of REDD+ projects, but rather to support itself on the operational procedures of existing internationally recognized standards (CCBA, VCS, etc.) and does not intend to manage ERs, but will rather support itself on existing market infrastructure such as the VCS registry.

Ecuador

In 2012, through a first Ministerial Agreement¹⁴ Ecuador has established the Ministry of Environment (MAE) as National REDD+ Authority (AN-REDD). The MAE now has the mandate to adopt the necessary guidelines for the development of REDD+ projects at the national and/or subnational level. Given art.74 of Ecuador's constitution¹⁵ it appears unlikely that individual projects will market ERs. Rather it is foreseen that the State will centralize ER trading and transfer cash incentives to projects and programs on the ground. The MAE is currently drafting regulation that will create a three step administrative process to manage official approvals for REDD+ projects. To do so the MAE will adopt a series of guidelines or "normativas" which will establish: requirements and procedures for registration, approval and implementation of REDD + projects; the organizational structure, competencies and processes for issuing administrative acts; requirements and procedures for the process of free, prior and informed consent; requirements for benefit-sharing and its monitoring; mandatory monitoring and reporting requirements for carbon and safeguards; penalties for breaches to the regulation; procedures for disputes resolution.

To manage the approval process and all the associated information, the MAE has created a national REDD+ registry which is fully integrated into the Country's Unified Environmental Information System an online system that seeks to consolidate all the forestry and environmental sector information in Ecuador.

Ecuador would like to use its registry system to identify actors and areas that could receive results based subsidies through a National Emission Reduction Program, to increase transparency and facilitate consolidated reporting on MRVed results and compliance with safeguards. For now, Ecuador has not expressed interest in creating an ER transaction registry to support emissions trading for projects on voluntary carbon markets. Ecuador has yet to define how it will handle emissions trading or other forms of performance based payment, options include simply opening an account in an existing or future registry or entering into "softer" bilateral agreements for performance based payment.

¹⁴ Acuerdo Ministerial 231 (03/08/2012 RO)

¹⁵ Article 74 of the Constitution of the Republic of Ecuador states that "environmental services are not subject to appropriation; their production, delivery, use and development will be regulated by the State".

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