

Info Note

Developing Public-Private Partnerships for effective access and use of climate information services by farmers and pastoralists in the Great Green Wall intervention zone of Mali

Findings from the project “Addressing SDG15 in the Sahel by Building Pathways for Transforming Food and Land Systems in a Climate Crisis”

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Key messages

- Very weak collaborations currently exist between the key stakeholders required to promoting sustainable access and use of CIS in the intervention zone of the GGW in Mali;
- Through inclusive and participatory consultations, all key stakeholders i.e., Orange-Mali, MALI METEO, Institute for Rural Economy (IER) and the Great Green Wall Agency (ANGMV) are now engaged and committed to develop PPPs for CIS dissemination
- Three potential PPP business models have been developed, of which the model for Business to Business to Client (BBC) with revenue sharing has been validated as the best actionable option within the GGW by all involved actors;
- The model for Business to client (B2C) can be run across the entire Mali.
- Differentiated roles and responsibilities have been defined for each involved actor along with a work plan for next steps.

Background

Most environmental issues in Mali include desertification, deforestation, soil erosion and drought affecting ecosystem balance in about 51% of the country and resulting in a loss of arable land and drop in productivity. The Great Green Wall initiative (GGW) is a symbol of hope to face desertification, one of the biggest challenges. Launched in 2007 by the African Union, this game-

changing African-led initiative, aims to restore Africa's degraded landscapes and transform millions of lives in one of the world's poorest regions, the Sahel (Dia and Duponnois, 2012). One of the main objectives of GGW is to develop sustainable management of land and water in targeted landscapes and climate-vulnerable zones. In Mali, the GGW has undertaken actions to strengthen the resilience of populations in arid and semi-arid zones through tackling climate change, desertification, and biological diversity degradation, and to promote partnership and synergy of actions between the players for the sustainable implementation of the initiative.

Through the present research activity, CCAFS/ICRISAT aims to analyze current collaborations in order to establish the public-private partnerships (PPP) required to promote the sustainable use of climate information services (CIS) and agro-advisories for improving management of climatic risks by farmers and pastoralists from the GGW area in Mali.

This research activity pursues three specific objectives: 1) Evaluate existing collaboration and mechanisms for mainstreaming CIS and agro-advisories into the activities conducted by the Great Green Wall National Agency of Mali; 2) Develop Public-Private Partnerships for the sustainable management of climate risks in the zone of the Great Green Wall; 3) Define activities, roles and responsibilities and possible contractual issues for the sharing of costs and benefits between the actors involved in Climate Information Service activities in Mali.

1. Research approach for the development of PPP Business models for CIS

The methodological approach of this research was a participatory and inclusive co-development and establishment of “win-win” business models. We first identified key partners based on experts’ knowledge and on our working experience on the GGW zone which was considered as entry point and used at first for validation of partners list. A meeting was organized with the leaders and staffs of the respective partners department to share the objectives in order to obtain their commitment to the initiative. For the evaluation of existing partnerships and CIS mainstreaming into the GGW area and work planning, we organized interviews and focus groups with each of the four main partners (Great Green Wall, Mali Meteo, Orange Mali and Institute of Rural Economy) in order to determine their strengths, weaknesses and new opportunities for CIS designing and dissemination with farmers and pastoralists. As far as the development of business models for Public-Private Partnerships for the sustainable management of CIS in the zone of the Great Green Wall is concerned, we first organized a 2 days’ workshop with 31 actors while also inviting local representatives of municipalities, ‘local prefet’, farmers community-based organizations, radios’ representatives from Nara (a local of the GGW), and agricultural and livestock extension workers. Participants were grouped according to areas of interest to identify areas of partnership and each participant should indicate to others what does it can offer and vice versa (Picture 1). Subsequently the activities were identified and roles of partners were identified along with future work plan. Then, a second two days’ workshop was organized with only 16 actors in order to better deepen the ideas and validate the current situation of partnerships and respective business models followed by action plan for 2022. This last workshop consisted of presenting the analysis of the first workshop (potential business models) results to the actors. We finally described the roles and responsibilities for each actor for the implementation of the validated business models.

The zone of the Great Green Wall in Africa covers a strip 9,000 km long and 15 km wide on average. In Mali, the Great Green Wall extends over a length of 2,066 km and a width of 215 km crossing 8 administrative regions, 24 districts, 204 municipalities and more than 2,622 villages (with a population of about 4 million people).

In application of article 5 of the Convention of the Pan-African Agency of the Great Green Wall regarding the establishment of national agency in the member states, Mali government created firstly the Management Unit of the Great Green Wall (UGMV) in March 2016. This Unit was erected into the National Agency of the Great Green

Wall (ANGMV-Mali) by the government in 2019. The Great Green Wall Agency in Mali was considered as main partner in the present activity because all the PPP activities would be implemented in its intervention zone.



Picture 1: Group discussion to identify areas of partnership

The profile assessment indicated that the GGW Agency is newly created and what the research team expected from them (to lead the PPP process with other) will be difficult because the agency does not have staff in the field and it relies on the service providers and the field staff of the Ministry of Agriculture when it has activities. Also, the agency is running on projects and program funding because the government allocated only the running fees to the agency on the national budget.

Less activities are funded by the government budget allocation which makes the Agency to depend on external funding. This finding may change the plan that the research had for the agency.

In terms of strengths, weaknesses, opportunities and availability to have public private partnership focused on climate information services for farmers and pastoralists in its zone, the research showed that the agency has currently many funding partners but not a PPP. However, they are willing to go with PPP in order to achieve its goal.

The current situation of the agency is that it has many funding partners but not a PPP. However, they are willing to go with PPP in order to achieve its goal.

1. 1. National Meteorology Agency of Mali (MALI-METEO)

The National Meteorological service was established as agency in 2012 called MALI-METEO with the mission for observation and study of the weather, climate and atmospheric to ensure the safety of population and contribute to the economic and social development of Mali

through the provision of information and services to the users. It participates to the development of the national meteorological policy and coordinates its implementation and monitoring for the country.

MALI-METEO is the only public service that has the mandate to provide weather forecast either for private or public sectors in Mali. The agency has then the mandate to provide seasonal weather forecasts which is freely accessible through national TV and radio or through partnership. Currently MALI-METEO relies on ground stations which provide large scale forecasts resulting on large uncertainty. For instance, through national TV or radio, MALI-METEO provides rainfall forecast for the all-region of Koulikoro which represents 90,120 km² and comprise 106 communes while it may rain only in few communes and may not reach other places where farmers are expected. Such large-scale rainfall forecasting is limited for farmer decision-making.

However, “if MALI-METEO is able to provide localized forecasts, we will have confidence in them and this will help us to better plan our field activities “said a representative of farmers during the first workshop of PPP development” and this indicates farmers’ needs for localized forecast.

In terms of the strengths, MALI-METEO can timely provide weather forecast all over Mali and represents the only public service that has the mandate to provide weather forecast such as daily temperature, wind speed, seasonal and daily rainfall either for private or public sectors in the country. Specific climate data sharing with partners depends on partnership agreement however clients can also pay the CIS based on negotiated cost.

As far as weaknesses are concerned, MALI-METEO cannot provide localized (9 km²) weather forecasts because the agency do not have the appropriate equipment and they are also in lack of qualified human resources. Although MALI-METEO uses national TV, radio and community radios as well as community-based groups to share CIS, they still need more updated and direct ways of information sharing with users. MALI-METEO then express the needs for more resources to implement its activities in order to achieve the goal. The agency depends on the national budget of the government and this budget allocated to the agency cannot cover all the activities planned per year.

In terms of opportunities and availability to go for PPP to provide CIS to farmers and pastoralist, MALI-METEO can generate weather information and share directly with the

communities upon agreement. Agency has expressed the needs to go for PPP but would like this PPP a “win-win”.

“My-Agri1” of Orange Mali (A mobile phone Company in Mali)

Orange Mali is a mobile phone company operating throughout the country. Its department of Corporate Social Responsibility supports the rural communities to access to climate information and advisories by SMS on phone after subscription through USSD #222# or by voice call using 37333. To access SMS services for daily rainfall, a minimum of one calling unit corresponding to 25 FCFA/SMS (\$ 0.04) or 750 FCFA/month (\$ 1.29) or a sufficient unit is required for ensuring communication (Traore et al., 2017). A platform called “Sènèkèla” which means “the farmer” in local language, was set up in 2013 under this department to inform, train and guide farmers and traders through agricultural advice and guidance on agricultural commodities’ prices. This platform is being technically supported by National Research Institute (IER) for providing agricultural advisories such as the use of crop varieties, fertilizer application, disease control, etc. Despite the strengths material, financial and human resources and the capacity of the company to provide personalized CIS, Orange Mali does not have a local partner to work with regarding localized weather forecasts in Mali. The Company is currently partnering with an external weather forecast private company which does not have a focal point residing in Mali with whom Orange Mali could interact directly. The company lacks local partner that can provide localized weather forecast information. The company is ready and willing to go for a PPP and has seen MALI-METEO as an opportunity if they can generate localized weather forecasts for sharing with clients.

1.2. Institute of Rural Economy (IER)

The Institute of Rural Economy is a Public Scientific and Technological service with the missions to develop and implement agricultural research programs; to transfer technological innovations to the rural communities and to contribute to the training of agricultural research staff on new technologies.

In terms of strengths, IER is specialized on agricultural research activities for rural development and the main research programs focus on climate adapted seed varieties selection, soil and water management technologies, environmental changes studies etc. As public research institute, IER has the mandate from the government to do research and share the results with farmers for demonstration and dissemination.

¹ Sènèkèla is the social development Unit of Orange that works for the rural development

In terms of weaknesses, IER has a department of communication for rural communities but this does not work well due to low operating budget. As consequence, many research results on new adapted varieties and technologies to climate change are not well known and weakly access by farmers.

IER needs more PPP in order to share and facilitate access to the research results with rural communities.

As opportunities and the availability to go for PPP, IER can make available research results through other private or public services because their communication unit is not able to cover the wide communities. The Institute showed a willingness for PPP to support rural communities in the Great Green Wall zone in Mali with the technologies and research results.

2. Conceptual Business models for Public Private Partnership in the GGW zone of Mali

2.1 Current collaborations

In the current situation there is a formal collaboration between IER and the MyAgri (Senekela) service of Orange Mali and also between IER and MALI-METEO which consisted of climate information and advice conception then provision to farmers and pastoralists through mobile phone platform or through local radios or community-based organization in Mali. This collaboration (Orange-IER and MALI METEO-IER) is not focused on the GGW zone. Also, the GGW agency, municipalities, extension workers and community radios are collaborating informally in some villages of the GGW zone.

As of current, it seems the collaboration between the key stakeholders (Orange-Mali, MALI METEO, IER and GGW) for using CIS in the intervention zone of the GGW in Mali is very weak or even nonexistent (Figure 1).

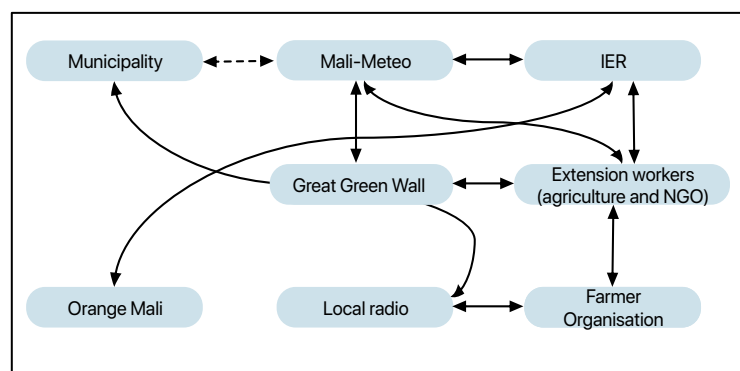


Figure 1: Current collaborations between stakeholders

2.2 Model for Business to Business to Client (BBC)

Based on their respective mandates and what each partner can bring or receive from the others, stakeholders developed and validated a “Business to business to client” model between CIS providers (MALI-METEO and IER), dissemination services (Orange Mali Extension workers) and the end users such municipalities, radios and farmers organization with a focused on the GGW intervention zone of Mali (Figure 2). The GGW zone and agency will be like a connector between service providers, dissemination and users.

MALI-METEO, with its new acquisitions of equipment, would be able to provide localized daily rainfall and seasonal forecasts that the sènèkèla platform can share with farmers after voluntary subscription and payment of the service fees to Orange Mali. In this model, the GGW through its connection in field and link with agricultural or livestock extension services and radios will play the role of organization, mobilization, coordination of the CIS provision at the community level. Based on the daily and seasonal rainfall forecasts provided by MALI-METEO, IER will develop and provide a series of agricultural advisories such as adapted varieties according to different agroecological zones, appropriate planting dates and water harvesting technologies etc. to the sènèkèla platform of Orange which will disseminate to farmers, local radio and municipalities through mobile SMS, mobile voice and Call center while taking into account the geolocation of users. In this model, although Senekela transmits the information directly to the farmers, the local radio and the municipalities represent also mainly relays for dissemination to the whole community. End users are mainly farmers but municipalities can also be potential users.

The connected dash curve lines represent the feedback of the information. For example, based on forecasts farmers share with the senekela platform the quantity of observed rainfall and which will be reported to MALI-METEO and IER for the capitalization, database but also for the elaboration of short-term recommendations.

Expected results such as numbers population using CIS and CSA technologies with the support of PPP will be capitalized as contribution for building community’ resilience to climate change and variabilities in the zone of GGW in connection with the government’s national policy.

Advantage of this model is that its operation depends on the involvement of each partner as well as its sustainability depends on the sharing of revenues generated by the system and collected through the sms and voice sms system of the senekela platform of Orange Mali.

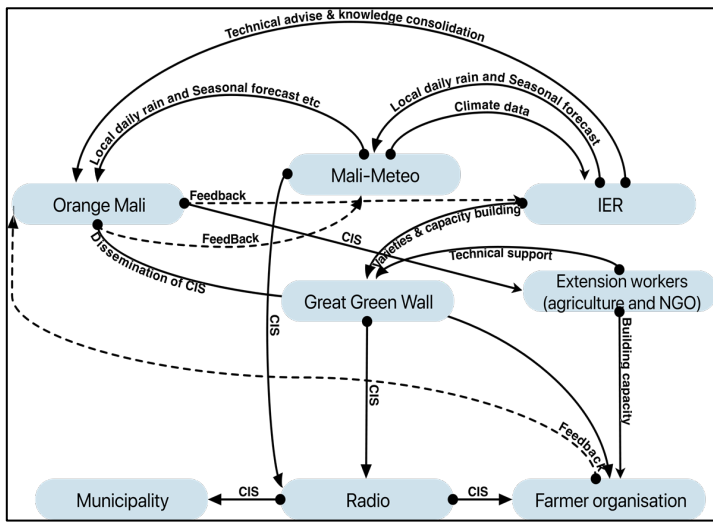


Figure 2: Business model between CIS actors (Orange Mali; MALI-METEO and IER), the Great Green Wall and Clients).

2.3 Model for Business to client (B2C)

The business-to-client model is primarily based on direct interactions between CIS providers and the users. The connected solid curve lines represent information flow from services providers to the dissemination or to end users while the connected dash curve lines represent feedback information among actors. In this model (Figure 3):

Mali-Meteo generates climate forecasts and make it available to IER which in turn elaborates technical advices and recommendations which will be shared back to MALI-METEO. Both MALI-METEO and IER respectively provide weather forecasts and agricultural advice to the “Senekela” platform of Orange Mali.

Orange Mali is responsible of the dissemination of climate information and advices provided by MALI-METEO and IER with farmers for making agricultural decisions.

Local radio can also receive directly CIS from MALI-METEO upon an agreement including fees for dissemination.

The connected dash curve lines represent feedback information. In return, the benefits collected by Orange Mali from users (subscription cost, SMS cost) will be a subject of contract negotiation to be shared with MALI-METEO and IER. Feedback from services will be collected from producers and users and through the “Senekela” platform using SMS and voice calls.

This model can be run across the entire Mali because the GGW is not essential for the running of this business model. In case GGW is not able to play its key role of community mobilization/marketing next to users, this model is free from the GGW agency and zone.

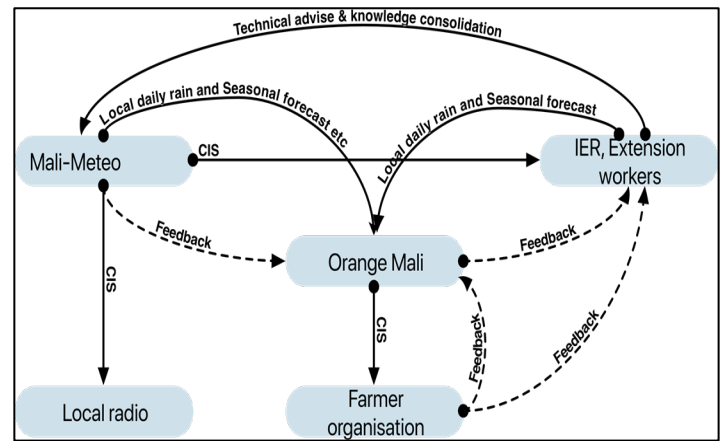


Figure 3: Business to Clients model (B2C).

2.4 Model for Business to Business to clients with revenue sharing concept

This BBC model with revenue sharing aspects has been validated by all the public and private stakeholders involved. In addition, the actors have step by step indicated plans for revenue sharing based on contribution of everyone including donors (Figure 4). In the model, the connected dash curve lines represent feedback information while the dash curve lines in pink color and blue color indicate respectively the revenue sharing flows and any technical and financial support from external donors such as projects, government and INGO. When farmer organizations and other users will subscribe to receive from Orange Mali the CIS and agro-advisories, they will pay Orange Mali prior to the generation by MALI-METEO and IER. This revenue will be shared by Orange Mali with MALI-METEO and IER. Also, if the GGW Agency is able to play the role of mobilization to permit Orange to have a targeted number of users, then Orange Mali is ready to have a non-monetary revenue sharing system (capacity building...) with the GGW.

In this model, MALI-METEO and IER are CIS services producers and they will respectively exchange climate information and agro advisory information in the GGW intervention zone. Orange Mali, as CIS dissemination channel receives daily weather forecast from MALI-METEO and agro advisory from IER.

Orange Mali in turn will use the services of the GGW agency which is considered as community mobilizer and facilitator among actors to reach the end users. The extension workers and local NGOs are considered as the field workers in the GGW intervention zone to mobilize and trained farmers and pastoralists on using of CIS and technologies.

Donors such as government, projects and INGOs are considered as support providers to the other stakeholders for system establishment especially in the beginning. This support can be used to promote use of CIS in new areas and specially to subsidize the costs of text messages and

voice calls and benefits as well to service providers (Orange, IER and MALI-METEO) with equipment and capacity building. Local radios needs also support from donors broadcasting CIS. Finally, GGW agency may benefit from their funding to play their roles and responsibility in the model especially for community mobilizing and facilitation. As return, donors, (Government, project and INGOs) would have contributed to building community resilient to climate change.

The revenue sharing will be a contracting negotiation between Orange Mali and MALI-METEO and between Orange Mali and IER.

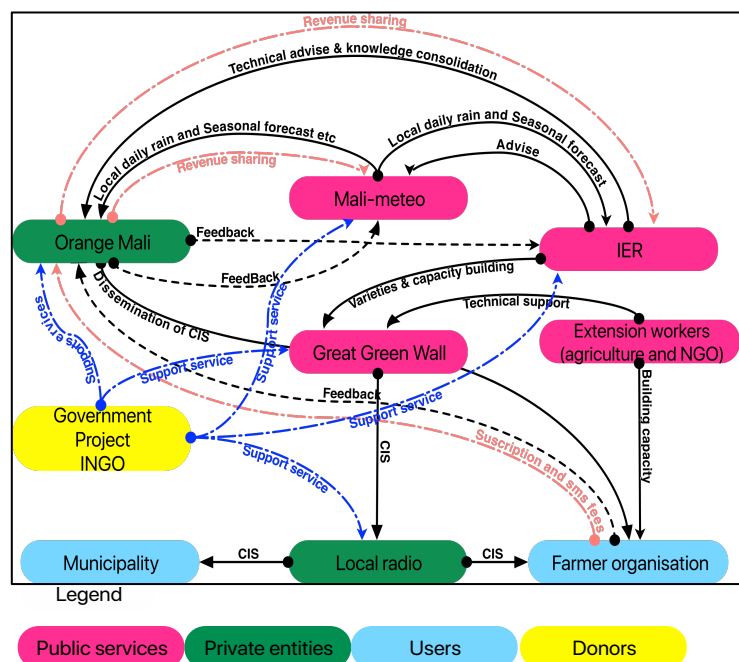


Figure 4: Business to Business to Client (BBC) with revenue sharing aspects.

3. Action planning for the next steps

Based on designed and validated business models (Figure 2, 3 and 4), stakeholders have elaborated comprehensive work plans for the next step of contracting aspects and activities implementation. Orange Mali and MALI-METEO agreed to share feedback of PPP validation workshop in their respective Agencies and companies on January 2022 followed by a meeting between the technical teams of the two partners to discuss the partnership contract on February 2022 and develop the partnership contract on March 2022. Climate information service will be provided to farmers and municipalities from May to October 2022.

4. Conclusion and recommendations

We found that in the GGW zone, the main partners evolve individually according to their interest, and there is lack of coordination, indicating a need to setting partnerships for climate information services use. The development of PPP

business models through this activity allowed participants to get to know better each other but also to engage in a win-win partnership under which each partner will play a key role based on their zone of expertise.

The validated and consensual model was the BBC with revenue sharing part as it involved all the partners and provides sufficient room for sustainability. The B2C model is optional and could be run nationwide in Mali. From the findings from this research, we recommend:

1. To MALI-METEO to be able to provide localized daily and seasonal forecasts to Orange Mali and IER;
2. To MALI-METEO to start early capacity building of MALI-METEO staff on the management of localized data;
3. To all the PPP partners to implement the activities of the action plan in order to have agreements for CIS provision to farmers and pastoralists during 2022;
4. To Orange Mali to have an agreement on sharing the profit with partners (MALI-METEO and IER)
5. To Orange Mali to evaluate the profitability of business models for suppliers as well as for users
6. To CCAFS/ICRISAT to follow up, monitor and evaluate components for the process
7. To CCAFS/ICRISAT to have a coordination mechanism among all the stakeholders for the implementation of the PPP and to maintain a facilitation role over the next steps described above.

Further reading

Dia, A., Duponnois, R., 2012. Le projet majeur africain de la Grande Muraille Verte: concepts et mise en œuvre. IRD Editions.

Traore, B., Ouedraogo, M., Birhanu, Z.B., Gareka, F., 2017. Climate information at our fingertips in Mali. Innovation for Climate Resilience Case Studies Series. BRACED. <https://doi.org/1350>

This info note summarizes findings on “developing Public-Private Partnerships for effective access and use of climate information service by farmers and pastoralists in the Great Green Wall intervention zone of Mali” as part of the project “Addressing SDG15 in the Sahel by Building Pathways for Transforming Food and Land Systems in a Climate Crisis”. This research activity is implemented by CCAFS West Africa program in collaboration with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). The authors accept full responsibility for the contents of this report. The report does not necessarily reflect the views of the donors.

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