



# CLIMATE SERVICES FOR INCLUSIVE DECISION MAKING ON RESILIENCE IN THE SAHEL

The first ALFA Sahel discussions on climate resilience in the Sahel noted increasing pressure on resources and resulting conflicts among farmers and pastoralists, and that the impacts of climate change are further fragmenting social norms and existing governance structures. Governance of natural resources is seen as critical for resilience but must be more inclusive. Access to climate information is needed to support ongoing adaptation decisions for reducing risks and selecting investment and technology options at different timescales, but it has emerged as a major challenge. The third ALFA Sahel webinar brought together a mix of practitioners, researchers and policymakers from 16 organisations working in 6 West African countries to discuss this challenge, asking:

- How could climate information services promote greater inclusion of farmers and pastoralists in adaptation decision making?
- How should we change our own practices in climate services for adaptation decision making to be more inclusive?

## CLIMATE SERVICES IN THE SAHEL

Participant discussions were inspired by three presentations of successful climate services approaches at short, seasonal and long term timescales, looking at early warning systems in Mali, participatory scenario planning in Niger and theatre forum to support inclusive dialogue on long term adaptation strategies in Senegal. The presentations aimed to illustrate who benefits from climate services and how, the opportunities and challenges experienced for climate services to reach farmers, pastoralists, men and women inclusively and enable equitable and informed decisions at individual, community and ecosystem / landscape level.

## **Presentation 1: Early warning information for climate-smart livelihood management in Mali**

The early warning system in Mali is built for both food security and disaster management. It combines weather, climate and food security data collected at community level, local weather stations, national and regional level and international model calculations to create seasonal, bi-weekly and short-term alerts. The alerts support livelihood strategies at community level as well as Forecast based Action (FbA) or financing (FbF) and emergency response actions. Community level observations confirm and build trust in the forecasts and contribute to downscaling and improving them locally. Nevertheless, all these elements are not yet well connected. The synergy between development and humanitarian actors still requires improvement.

At Regional level in West Africa the Food Crisis Prevention Network (RPCA, hosted by CILSS) coordinates government responses to food security status and crises. At the local level 72 hour alerts are used for disaster warnings and also support livelihood choices, for example, timing of planting and protection of animals. Alerts are combined with advisories and agricultural information to support greater resilience, with great success in some small pilot projects so far. For example, in low rainfall areas where farmers depend on rainfed crops, early sharing of expected rainfall in 72 hours helps with precise preparation of seeding which can assure a successful outcome.

This can be implemented through for example advice on soaking seeds in water before planting to maximise the value of the immediate rainfall, speed up germination and shorten the growing period. Farmer Field Schools have proven a useful approach in supporting use of weather forecasts and farmer confidence to use the information or not in their decisions. The SNV supported STAMP+ (Sustainable Technology Adaptation for Mali's Pastoralists) application helps transhumant pastoralists to make migration decisions through access and use of geo-satellite derived data on biomass and water availability via a dedicated mobile phone-based information service.

In the Inner Niger delta floods are a critical risk. [OPIDIN](#) is an annual flood prediction tool that provides an Early Warning System for communities in the delta and helps them to make more timely decisions for their livelihood activities and protection of assets. The tool provides flood forecast information one or two months earlier than was possible before, and gives more detailed information such as how long the water will rise and when the peak will be reached. This gives more time and better information for decision making. OPIDIN is inspired by collective community knowledge of historical flooding of the Inner Niger Delta, and the way they have adapted their way of living over time. This is combined with long term monitoring of water levels in the Upper Niger Basin and Inner Niger Delta by the National Hydraulic Directorate in Mali. Activities that benefit from early information include timing and locations for rice growing in flood waters, management and protection of irrigation equipment and dykes, availability and management of floating aquatic fodder for livestock use during the long dry season, timing of when the floodplains will become available for livestock and early preparation for the fishing season.

However, reaching all community members who need information remains a challenge. Farmers, fishers, pastoralists and men and women need tailored information to plan for their different decisions and activities at the right time. For example, women depend on rainfall or sunshine to dry fish, produce and dry vegetables, cassava, bark etc and to store it in dry conditions for their use, storage and marketing, but the information available may be more tailored to main crop production. Early warning systems are improving and being developed for a wider range of livelihood uses, but still have a way to go to be fully inclusive.

## Presentation 2: Participatory Scenario Planning for Seasonal Forecasting in Niger

PSP is an approach for collective sharing and interpretation of seasonal climate and weather forecasts to enable the integration of climate resilient livelihoods and risk management into community, local and government planning and decision processes and support adaptation to climate change and disaster risk reduction measures in key sectors. It is a multi-stakeholder process for access and dialogue to collectively 'translate' seasonal climate predictions into locally relevant information that supports decision making and adaptive planning for the coming season.

### How does the PSP approach work?

- The PSP is organized at local government level as soon as scientific seasonal forecasts are available for a given season. PSP workshops are always done in the local language to improve ownership of what is said and the outcome.
- PSPs bring together meteorological services, local forecasting experts, community members, government officials including leaders, planner and climate vulnerable sector services, researchers, media / local radio and local NGOs etc. to share their weather and climate knowledge and translate it into useful and locally relevant information. Information on seasonal forecasts includes the expected amount of rainfall compared to a 'normal' season for the area, dates for the onset of the season, dry spells or drought period (long or short) at the beginning, middle and end of the season.
- Participants discuss and agree together on what the forecast means, based on the met services and local forecasts and a review of the past season and current situation. They collectively develop different possible scenarios and options for action as individuals, for groups and for sector services from the combination and interpretation of this information, which is now localized.
- Participants make a communication plan for how to share the localised forecast and advisories for action to those not present at the forum. After the forum, the results are translated into all the local languages so that the large number can hear the results which are broadcast by large-scale community radios, which are popular media that have greatest reach. Sector extension services, sharing among local community groups, administrative platforms and project teams can also be used to communicate the PSP messages. Community radio has also been used in Niger to broadcast the results of discussions between the actors present at the workshop.
- After the forum a debriefing workshop is held to assess the value of the facilitation approaches, participation, outcome and so on.

### Farmer and pastoralist decision making

The final forecast and advisories guide farmer and pastoralist decisions on what, when, where and how much action to take, for example as shown in the following table:

Group	Decision question	Issues
<b>Farmers</b>	<ul style="list-style-type: none"> <li>• What combination of seeds? (e.g. early and drought-resistant varieties);</li> <li>• When to sow?</li> <li>• How much? (to avoid total loss of seeds due to climatic risks).</li> <li>• How to increase the chance of harvests?</li> </ul>	Farmers decide on planting dates not only on the basis of the onset of the rainy season, but also taking into account when rainfall will be sufficient to allow their seeds to grow and the crops to mature and avoid the risk of seed loss during prolonged dry spells.
<b>Transhumant pastoralists</b>	<ul style="list-style-type: none"> <li>• When to go or not to transhumance?</li> <li>• Where to go?</li> <li>• Is it useful to engage in other risk management, health and protection strategies for the herds?</li> </ul>	Pastoralists decide on types of animals to keep, improved or local breeds, their livestock management practices and other income generating activities according to their context, requiring complex interconnected decisions.

PSP workshops are also spaces for dialogue and joint decision making between agro-pastoralists and farmers where they can discuss mutual benefits and trade-offs to ensure the activities of each livelihood group does not negatively affect another.

PSP values from a pastoralist:

"My name is Raouda Dengui, from Boundou Dengui Gageré camp, Bermo (a pastoral zone located in the northern limit of cultivation in Niger). I am a 55 year old pastoralist who has been moving livestock from pasture to pasture for more than 45 years. Usually, at the first rainfall, we start to migrate to the north of the pastoral zone. This year, I did the same, although my cousin, who is the only woman on the local council, heard the CARE team recommend waiting because of the seasonal forecast. To tell the truth, I did not believe it because for me, rain is God's responsibility. I even said it was madness to believe such nonsense. Yet she was right. When I reached the north, the drought dried up the grass that had just grown, the water dried up and we didn't have enough food. The herd didn't have the strength to make the return trip. We lost dozens of cows. Later, I called her to apologize and praised the Jimiri program for its concrete advice that combines local and scientific knowledge."



*Raouda Dengui*

**Value and benefits of the PSP approach:**

- The multi-stakeholder forums strengthen continuous dialogue, interconnection and mutual or "social" learning between the different actors. The approach builds community adaptive capacity by strengthening their anticipatory decision making based on access to useful information, understanding how to manage risk, generating innovative responses and organizing together for communication and action.
- Climate change continuously exacerbates vulnerabilities on different time scales, at different levels and in different livelihoods; this requires anticipating the opportunities that each season offers in relation to climate information. The forum allows for open discussion on uncertainties and changing risks due to climate and other factors affecting the lives and livelihoods of vulnerable populations, and the uncertainties in the probabilistic forecasts. Understanding of uncertainties as well as values of the forecasts, and grounding the possible scenarios in local knowledge and the local context enables participants to know what to consider when making decisions. This also shapes the way in which advisories are developed – as advice for decision making and not instruction, and increases confidence in using the information.



- PSP enables inclusive discussions between different actors using different natural resources in the same context and joint informed decision making on activities that are mutually beneficial. This co-production of knowledge can strengthen the development of agricultural and pastoral activities in the rainy / winter season
- The meteorological and government sectors, as well as other service providers, are better able to respond to the specific needs of different user groups. This facilitates effective climate information services and greater risk management informed by relevant sectoral expertise as well as climate science.

Challenges remain with the approach and its results. Timely availability of seasonal scientific forecasts and the met services personnel to explain and interpret them at the local government level varies greatly from place to place, and without these the PSP cannot be undertaken. If the forum happens too late, the resulting information delays in reaching those who need it, and they either make decisions without the information or they risk making decisions late to benefit fully from the season. Translation of scientific seasonal forecasts into information and formats that are accessible to decision makers is a key objective of the PSP but translation of the PSP outcomes into local languages for communication by for example radio can be a challenge, as can effective implementation of the PSP communication plan and reach to a large number of people.

Challenges for inclusive reach to all those who could benefit starts with the participants at the forum. The discussion outcomes depends on diversity of participants to ensure all interests are discussed and included. If women, or fisherfolk or youth or any other group or sector are not present in the workshop, the concerns and priorities of that group may not be addressed. Communication channels are also at risk of not being accessible by all groups. PSP principles highlighted in the [guide to the PSP approach](#) aim to ensure that implementers of the approach consider inclusion carefully.

### **Presentation 3: Forum theatre approach: Promoting inclusive dialogue in Senegal on climate change and adaptation strategies to enable joint knowledge and review of actors' differing priorities.**

Agriculture in West Africa must adapt in order to face major challenges related to climate change. But which adaptation pathways should be chosen to best respond to the multiple challenges? What are the uncertainties about the climate of the future? How to reconcile the sometime divergent interests of the various actors involved? How to design and implement the necessary mitigation and adaptation strategies? Faced with these questions, and in order to identify shared responsibilities, AMMA2050 has developed a play in collaboration with the Senegalese theatre forum group Kaddu Yaraax exploring issues raised within the project's efforts to strengthen climate-resilient agriculture (<https://www.amma2050.org/>).

When we want to explore and develop adaptation options, we face tensions and difficulties. These include top-down approaches, involving mismatches between disciplines, sectors or levels of decision making. There may also be difficulties in understanding climate change that occurs at a distant time horizon and for which there are differing levels of knowledge and uncertainty associated with different scenarios and models. These difficulties also exist when considering different adaptation options. We also need to consider the role that each actor plays and the relationships amongst them, and how these are framed and impacted by power structures.

In this study, our objective was to open and strengthen the dialogue between actors involved in decision-making for adaptation to climate change in order to move towards co-production of adaptation options and to identify levers to make decision-making more inclusive. We chose a singular and performative approach through forum theatre. This work is the result of a fruitful collaboration between research institutes and with civil society actors.

Theatre forum is a form of participatory theatre that has been specifically designed to enable discussion concerning the relationships of oppression and power between different characters. It allows for collective experimentation and co-construction with all the actors. The play explores the difficulties encountered when implementing adaptation options for tomorrow's agriculture and compares the experiences, agendas and sometimes contradictory motivations of the actors involved in adapting agriculture to climate change: donors, scientists, researchers, local government officials and farmers.

The play is called "Je m'acclimate donc je suis" ("I acclimatize, therefore I am"). The story is about a farming community faced with unpredictable weather and droughts and their struggle in accessing and trusting information and advice from a range of outsiders and local leaders including a climate scientist, a donor, a researcher, an elected government official and a journalist. The community learn the hard way that external advice is not always the most appropriate and that adapting to climate change requires a deep knowledge of the local context and an understanding of future climate change trends.

Participants are invited to watch and live the experience of the community, and not only be a spectator but also an actor. When the play ends, a judgment is made about each character by the participants. If the character has done something wrong, she or he is placed under the burning sun of the Sahel. On the contrary, if you think the character has acted well, s/he is placed in the pleasant shade of clouds or trees. After this judgment and some discussion on why the characters have been placed in sun or shade, the spectators have the opportunity to propose changes in the play that could help improve the situation, they can add a character, change the set or change the conversation. When the theatre company is present, the spectators can go on stage and act out their proposal with the actors, and the proposal is then then discussed with the audience.

This play has been presented on several occasions to a very varied audience belonging to a community of experts on the links between: agriculture and climate researchers, decision-makers, scientific mediators, NGOs, farmers. For each of the performances, all of the exchanges were recorded and are currently being analysed. Events in Senegal include: the final workshop of the AMMA2050 project in front of project researchers and national authorities (80 participants); in Dakar in front of 28 Directors of research centres and researchers; in Niakhar in front of 25 development actors, local authorities, and members of the PWG (multidisciplinary working group) and in Kaffrine in front of 32 mediators (journalist, farmers disseminating climate information, socio-cultural facilitator). It was also staged at the African Climatic Risk Conference 2019 in Addis Ethiopia in front of stakeholders from research, civil society, funding agencies and policy makers.

In the ALFA Sahel webinar participants watched [a video of the play](#) in Senegal and were then invited to judge the attitude and the acts of each of the characters and finally to think collectively about concrete actions to change the situation presented in the play. Participants reflected on what they thought was the main issue presented in the play and who is responsible for the situation. They were challenged to consider at least one action that they could take individually or within their institutions to address the challenges raised by the Theatre Forum.

In sum, Theatre Forum is an innovative approach which motivates a collective experimentation of new alternatives to challenging situations and in the process raises awareness about issues at stake (in this case climate change), options for addressing them and most importantly, makes it visible who is affected and should be included, who is responsible and who should be involved in the decision-making process.



*The Kaddu Yarrax theatre company, Senegal, © Adeline Barnaud, IRD*

## OUTCOME OF PARTICIPANT DISCUSSIONS

Participants raised questions on each of the presentations and discussed the overall webinar question on how to promote greater inclusion in climate information services to support farmers and pastoralists in adaptation decision making. The discussion revolved around the following issues, which need to be considered when developing and delivering effective and inclusive climate services.

### 1. Uncertainties, trust and confidence

Climate services operate in an uncertain space, which makes trust and confidence in the service a critical pre-condition for its use. Climate change and risks are uncertain and climate information is about future probabilities which cannot be guaranteed. While climate science is improving all the time, there will always be a level of uncertainty in forecasts. The services presented address this in different ways including many of the following good practices. Trust and confidence appear to increase when:

- relationships with the information provider and source of the information are strengthened and there is access to asking questions and getting more details

- uncertainty and probabilities in both climate-related risks and scientific climate information are transparently communicated and clearly explained within and alongside forecast and projection information
- scientific probabilistic forecasts are compared and combined with local knowledge and local forecasts, and interpretation of them is done collectively to allow for a more detailed understanding of the forecast's potential local impacts.
- After in depth comparisons between local and scientific forecasts, the gap between them may not be so large and this helps to restore confidence
- adaptive capacity of the users of the service are strengthened for making their own informed judgement and decisions through promoting access to and understanding of the best available knowledge rather than communicating a forecast with a pre-agreed set of actions which they have not been involved in developing
- discussions are held on how to deal with weather uncertainties, how to spread risks by balancing investments across different options and scenarios and how to reduce risk by being prepared for possible extreme events and disasters. Linking early warning systems with livelihood advice at community level is helpful.
- Differences among users are understood and respected, allowing for dialogue with different groups on their areas of concern – for example farmers and pastoralists, men and women.

## **2. Local knowledge integration**

Linked to building trust is the importance of understanding, respecting, learning from and incorporating local knowledge. This may be knowledge of the local context and situation for different people in the community and more specialised local or traditional knowledge of the local weather and climate and forecasting skills. Listening to specialist local knowledge holders and factoring in their information is important when developing and implementing climate services, as seen in the Theatre Forum. Relationship building between the people whose lives and livelihoods are most directly affected by climate-related risks and national meteorological services and climatologists can have mutual benefits in terms of increasing appreciation of specific decision-making contexts and improving local forecasts alongside building people's understanding and confidence in using climate information. Endogenous knowledge is promoted in other areas of development and is a useful system for integrating local knowledge with external knowledge for development decisions and actions. Learning from local knowledge and experience lends itself to opening dialogue with a broader range of actors in a community and therefore increasing chances of including a wider range of social and livelihood groups.

## **3. Availability, accessibility, communication and timeframes**

Climate information is only useful when it is accessed at the right time to inform a decision. This is the case for all timeframes - hourly and daily, seasonal or long term. There are often challenges with this. Decision making timing often does not align well with the timescales at which climate information can be produced – for example development planning and budgeting happens annually and every 4 or 5 years, while climate information is usually seasonal, sub-seasonal or at extended periods beyond 10 years. When the decision timing is short term to seasonal there may be challenges with accessing the information in the form needed at the time needed, given the diversity of needs, context, locations and climates. Forecasts also change and are updated over time, but these updates may not be accessed or integrated into the climate service, for example combined with information on the potential impacts for specific sectors. Sub-seasonal updates, monthly, 10 day or weekly updates are not necessarily linked to the users of a seasonal climate service, who continue to use out of date seasonal information.



Climate service developers need to strengthen the regularity, availability and accessibility of information for their users, including farmers, pastoralists, sectors, project teams, men and women and so on. This will depend on meteorologists and climate scientists providing regular updates so that any climate information and forecast shared is understood as part of an ongoing process, strengthening people's resilience to climate-related risks as scientific understanding evolves over time. It also depends on connecting the updates to a sustainable communication system accessible to the users of the information. In long seasons, such as in the Sahel which has a single rainy season each year, lack of updates month by month can erode the value and trust in climate information as the original forecast no longer represents actual weather experienced.

Moreover, communication is not only one way. It requires that users share feedback to information producers on the decisions and actions that they are taking, on their interpretation, use and the resulting impacts, and of how they used the information provided. Monitoring and feedback mechanisms which keep all the actors in a service connected and informed are important but rarely implemented, risking that the climate service is no longer responding to a need, may become redundant and/or that climate information providers are not able to gather data on the impact of the services they provide.

#### **4. Multi-stakeholder interaction**

Bringing together diverse actors and convening platforms for their interaction helps in better understanding the value of and how to use climate information and its uncertainties in a particular context. Each of the stakeholders learns from the other – community realities, sector technical issues and options and climate science – and these strengthen relationships and understanding among them. Such interactions help to unpack and de-mystify technical 'jargon' used by meteorologists and translate it into locally understandable information related to the context. While meteorologists, through such interactions, learn about the context, concerns, interests and information needs in the area.

Multi-stakeholder interaction such as the PSP approach supports collective decision making among different groups which strengthens commitment and ability to implement the decisions. For example when the PSP is carried out in an agro-pastoral zone, the meeting enabled separate group discussions for farmers and pastoralists and brought them together for inclusive discussions on mutually beneficial actions for both groups. This made it possible to have a common understanding between them and opportunity to smooth out any potential conflicts. For example, agreeing that farmers do not encroach on livestock corridors and where, how and when pastoralists can graze and manage their herds.

Collective dialogue and decision making also promotes innovation through the diversity of stakeholder representation sparking new ideas and opportunities for collaborative action. In resource constrained environments, multi-stakeholder interaction is often linked to specific projects and insufficiently integrated with annual budgeting. To address this challenge, connecting with and expanding participation in mainstream local and national governance mechanisms and documenting the socio-economic values of multi-stakeholder engagement will boost incentives and enable more sustainability.

#### **5. Power dynamics**

Powerful local and external actors can significantly impact local decision-making without ensuring local people's full knowledge and awareness of potential impacts, especially relating to complex issues such as future climate change risks and impacts. Community members are accustomed to external actors disregarding local knowledge and experience and bringing new technologies as part of development programmes, which may or may not ultimately be successful, viable or climate resilient. External actors are often disconnected and unaware of the local realities and challenges for livelihoods, opportunity, access and power.

Big business and local elites may collaborate to exploit more vulnerable people; economic incentives may override sustainable and environmentally sound action; short term gain and elite capture may override longer term community wide development.

The Theatre Forum approach raised and made visible these challenging dynamics which influence decisions at different levels. For climate services to be effective, the local decision context in which they are working should be understood and approaches developed for engaging with them constructively and working towards long term sustainable locally owned action. Enabling inclusive dialogue and co-production of climate services offer important opportunities to democratise risk governance.

## 6. Resilience

Climate resilience involves strengthening adaptation and risk management actions that will support livelihoods across timeframes to climate extremes, variability and change. The example of preparing seed for fast germination and disease protection in Mali and Niger is a good example at community level. At a much larger scale the Great Green Wall programme led from the Africa Union aims to strengthen climate resilience through large scale reforestation across the Sahel, where increasing tree cover is a well-tested nature-based solution which supports adaptation and mitigation and reduces risks and climate extremes. Climate information on long term future projections and trends provide valuable information to guide these activities, to ensure appropriate choices of crops, species, technology, timing and adaptation and risk management strategies.

## USEFUL RESOURCES

Practical Guide to Participatory Scenario Planning: Seasonal climate information for resilient decision-making. <https://careclimatechange.org/practical-guide-to-participatory-scenario-planning-seasonal-climate-information-for-resilient-decision-making/>

Theatre Forum: Video of the play: <https://youtu.be/ZxdZVf0BYsI> Background on TF: [https://www.youtube.com/watch?v=tnwpm\\_liV-8](https://www.youtube.com/watch?v=tnwpm_liV-8) and <https://www.amma2050.org/>

The ALFA Sahel 2020 webinar series is a forum for joint learning among practitioners, decision-makers and researchers on the challenges and opportunities for climate resilience in the Sahel. Go to [alfasahel.org](http://alfasahel.org) to learn more

