

# Family portraits: a tool for understanding local adaptation strategies

## Issue

In Senegal, failure to draw on local knowledge, especially with regard to local production and adaptation strategies, is one of the weaknesses of existing local planning systems.

With a view to strengthening local planning systems and tapping into local knowledge and experience, *Innovation, Environnement et Développement en Afrique* (IED-Afrique) has used the family portrait tool in the Decentralising Climate Funds (DCF) project in the Kaffrine region as part of the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme. This research tool complements resilience studies and household surveys already carried out by the DCF project, enabling a more detailed analysis of the rationale underlying the adaptation strategies a given family may adopt to ensure its well-being, drawing on its own resources. Although a single family portrait is not representative of the whole community, collecting information from several families with similar socio-economic characteristics, followed by a process of sharing and debating this information at the community level, can give us a clearer view of the nature, extent and success of the adaptation strategies local people adopt. The results will help policymakers to understand local dynamics so that local public investments can support communities' own adaptation strategies. The aim of this briefing is to share the lessons learned from the DCF experience of using the "family portrait" tool in Senegal. The preliminary results reveal divergent logic followed by two families that are seeking to ensure their resilience and well-being against a background

of climate and economic instability. While one family seeks to safeguard and maintain the productivity of its investments by incorporating climate variability and unpredictability into its production strategies, the other seems to follow an approach aimed at "eliminating" its effects by investing considerable sums of money to plug the gaps caused by climate variability or shocks. These experiences teach us important lessons about ways to improve resilience in the face of climate change. They also provide policymakers with more objective information to make the trade-offs needed to implement local development policies in favour of climate change adaptation.

## Methodology

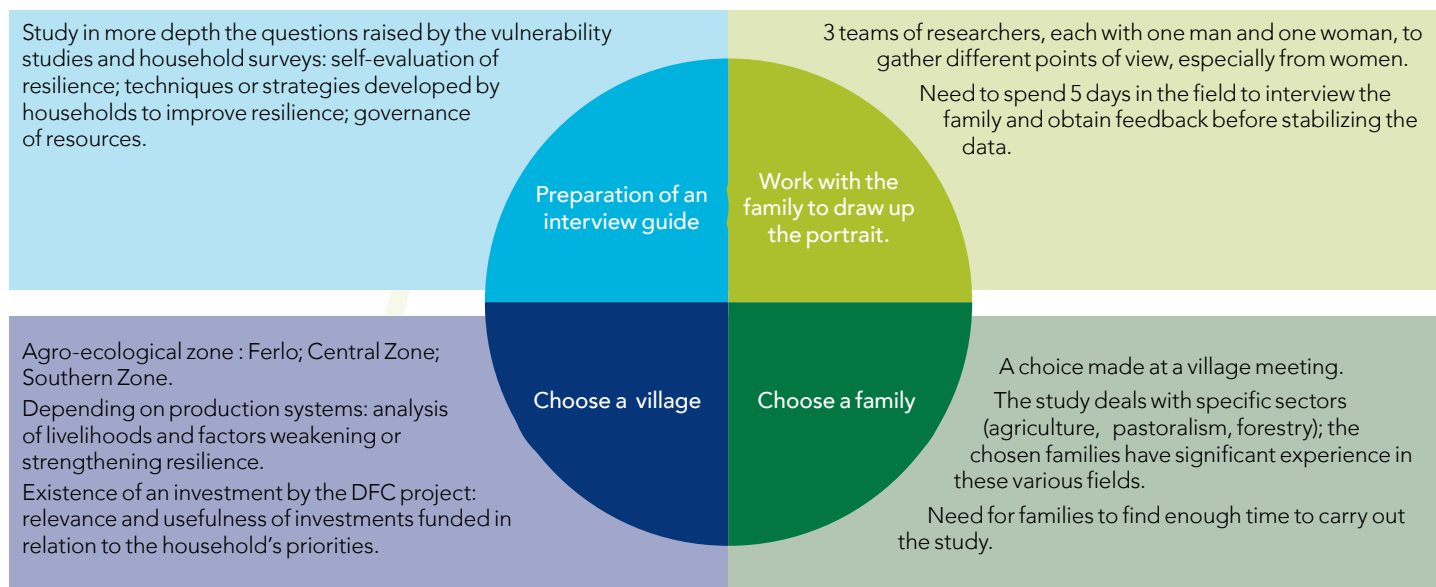
The "family portrait" tool was designed and applied in four stages. The first consisted of preparing the interview guide and selecting three teams of researchers. The interview guide sought to identify the key factors that undermine or enhance the resilience of households (and women within each household) in the various production systems (pastoralism, rainfed agriculture, agro-forestry, etc.) in the face of climate variability and shocks. The research teams consisted of one man and one woman to facilitate data collection from respondents of both sexes. The second stage consisted of choosing the villages in which to conduct the family interviews. Villages were chosen on the basis of their respective agro-ecological zone and production systems to get a better view of their diverse livelihoods and the factors weakening or strengthening resilience. The third

## Summary

The "family portrait" tool helps local development stakeholders, primarily the local authorities responsible for planning, better grasp the rationale and adaptation strategies people adopt in the face of climate change. Some of these strategies seek to integrate climate change, while others endeavour to circumvent its consequences. Better integration of such local knowledge and strategies within local planning systems in Senegal will enhance authorities' ability to fund more relevant public investments in support of local communities, boosting their resilience to climate change.



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stage involved choosing the families at a village meeting where, after an explanation of the objectives of the research, participants were asked to identify three families engaged in agriculture, pastoralism or forestry and who had significant experience in one particular field. Another key criterion was the family's availability to participate in research. The final stage consisted of constructing the family portrait. This required the research teams to spend at least five days in the field to interview each family member separately and in groups and obtain their feedback on initial drafts before finalising the portrait.

## Presentation of the families<sup>1</sup>

Three family portraits were created according to agro-ecological zone, in the agriculture, pastoralism and forestry sectors respectively. In this paper, we present two portraits (one in the forestry sector, the other in pastoralism) because the rationale used by the two respective families is completely different yet still well adapted to the context.

### Pastoralism

The family lives in Koungheul. It has 41 members, 15 men and 26 women, 21 of whom are of working age. The family has more than 470 head of livestock (cattle, sheep, goats, donkeys and horses). It is quite well-off, holding large amounts of land used for rainfed agriculture. The family is well integrated socially and politically in the community, with responsibilities on the town council, the local authority governing body. These opportunities enable the family to take part in decision-making concerning governance at community level.

<sup>1</sup> To protect their privacy, the families' names are not given.

### Forestry

The participating family is located in Birkélane. Its 18 members include seven women, with six people of working age. The family makes its living primarily from forestry, also engaging in rainfed agriculture and dry-season cropping (vegetables and rice), beekeeping and traditional carpentry. The women are involved in community activities and small-scale trading. The family is fairly well-off with a very significant social network. It also has contact with non-governmental organizations, such as World Vision and its training programmes, as well as agriculture and water and forestry services connected with managing and guarding the community forests.

## Adaptation strategies in the face of climate change

In the Sahel, people have always developed adaptation strategies to cope with climate variability. While some adopt strategies that embrace variability, others seek to mitigate or avoid its impacts.

### Towards a strategy incorporating climate variability

The agro-forestry family used to make its living from family farming. Faced with water stress and increasingly impoverished soils, however, the family could no longer guarantee its food security. It took up forestry in 2009 to ensure its financial security. Three species of trees were chosen: eucalyptus, *Acacia andosonii* (known locally as

nep-nep) and *Jatropha curcas* (known locally as tabanani). According to the head of the family, these species were chosen intentionally, partly for their resistance to water shortages and partly for their ability to provide products in different seasons. The family therefore has a continuous source of income throughout the year, but especially at strategic times such as the pre-harvest “hungry season.” The family still engages in rainfed agriculture, along with dry-season cropping – a crop diversification strategy that ensures them of at least a minimum harvest however variable the climate.

Eucalyptus wood, used for domestic energy purposes and construction, is mainly produced for sale, except in the case of firewood, some of which is for family consumption. During the dry season, eucalyptus remains the household’s main source of income, giving it the option to purchase food to ensure its food security when harvests are poor. Nep-nep is used as firewood and is an important fodder source for small ruminants in the dry season; in addition, powder generated in processing the fruit (in demand from shoemakers to preserve leather) is sold, becoming the household’s main income source during the rainy season – a time of year when the family needs healthy labourers for the fieldwork, the family’s grain stores may be empty, and the price of cereals is high. Tabanani is used as a biofuel and its production is continuously expanding in the area. It is cut annually at the beginning of the dry season, when it is the household’s main income source, enabling the family to reduce its dependency on the harvest of staple crops, millet and groundnuts.

In addition to other benefits, the availability of wood energy from exploiting these species reduces women’s workloads as they no longer have to go out to gather firewood. The time saving enables them to engage in small-scale trading and thus generate additional income for the family.

Exploitation of these three species of trees, combined with rainfed agriculture, provides the family with a source of financial income throughout the year. The surplus has enabled the family not only to cope with any poor farming seasons, but also to improve living conditions. Mud-brick buildings are being replaced by more permanent structures that are better able to resist flood-related damage, a source of losses in the past.

These observations illuminate how the family has incorporated variability into its production systems, adopting a sustainable financial security strategy based on agro-forestry and a food self-sufficiency strategy based on a combination of rainfed and dry-season crops to adapt to climate change in the Sahel.

## Towards a strategy of getting around the effects of climate change

Unlike transhumant herders who are mobile depending on the season, the pastoralist family participating in the family portraits study is fairly sedentary. This reflects the range of strategies developed to maintain a herd and ensure its survival, regardless of the uncertain availability of natural fodder resources that depend on increasingly unpredictable climate conditions. These strategies help to safeguard the herd even during uncertain or unfavourable conditions and to avoid the negative impacts of climate change. The family includes the village chief and elected representative on the local municipal council. It enjoys social benefits inherent with this status, along with easy access to credit, and the family has the necessary financial resources to keep its livestock in situ. This means it can employ external labour to herd the animals locally and take advantage of more nutritious grazing during the rainy season in more distant areas of the Ferlo. As part of its sedentarization strategy, the family devotes considerable sums to the purchase of inputs for livestock during the long dry season, purchasing livestock feed supplements (cake, hay, salt, etc.) to enhance productivity. The family also invests in animal health, purchasing veterinary medicines and paying for the service provider’s travel. Expenses in the dry season are higher than in the rainy season. The livestock are watered at local boreholes at an affordable cost. These strategies evidence the family’s ability and commitment to invest in external inputs to enable it to adopt a sedentary lifestyle rather than investing in pastoral mobility.

With a view to sound livestock management, the family often destocks, selling weak or infertile animals to generate income and help maintain potential breeding stock and the rest of the herd. The family also frequently replaces stock to intensify fattening at lower cost. This a strategy of stocking and destocking the herd based on well-founded commercial logic to ensure the family’s survival. The most salient fact is that these particularly effective strategies do not change according to season. The 1985 drought provides a good illustration: the family destocked to purchase livestock feed and then replaced the stock in the same way as in previous years. The effectiveness of these strategies lies in the choices made to avoid climate variability.

## Conclusion

The family portraits presented here illustrate different context-specific adaptation strategies. The study demonstrates the extent to which diversified strategies adopted by rural producers in Senegal differ from government policy. In seeking to ensure effective protection of threatened livelihoods and to enhance people's resilience, local development policies often stress major investments such as industrial monoculture and emergency programmes designed to meet immediate needs. Such approaches do not take sufficient account of community dynamics and the obstacles to their development. They do not enter into partnerships and strategic alliances with grassroots communities to ensure the continuity of the achievements of the various initiatives. Inspiration needs to be taken from endogenous practices aimed at preserving nature. These practices rely on traditional knowledge but also draw on modern techniques and technology to enhance resilience. Producers combine a multitude of strategies, investing in a range of opportunities, crops and markets depending on their profitability at different times during the season and year. A mosaic of small investments creates an economic and social fabric conducive to resilience.

We should point out, however, that the families considered in this study are better off than the majority. While it may be that their strategies are not the most common in the community, they can nevertheless inspire local policymakers and lead them to choose public investments that allow other, less well-off segments of the population to adopt these kinds of strategy as a result of the public goods investment. In particular, the strategies adopted by the pastoralist family partly rely on political strategies. Nevertheless, the key message from these family portraits is that producers are proactive, adopting solutions better adapted to their own circumstances and designed to co-operate with rather than dominate nature. Better integration of such local knowledge and strategies within local planning systems in Senegal will enhance authorities' ability to fund more relevant public investments that are able to systematize the implementation of proven local strategies to help communities to cope more effectively with climate change.

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## The project

Decentralising Climate Funds (DCF) is a research-action and advocacy project supporting local people in Senegal and Mali to become more resilient to climate change through access to locally-controlled adaptation funds. The project is part of the BRACED programme funded by the UK government and carried out by the Near East Foundation (NEF) with Innovation, Environnement et Développement en Afrique (IED Afrique) and the International Institute for Environment and Development (IIED).

Photos: A women's meeting for a micro-credit project; A hive for beekeeping in a field of the head of the household. Credit: Salimata Ndoye.

December 2017

Policy  
Brief



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This material has been funded by UK aid from the UK government; however the views expressed do not necessarily reflect the UK government's official policies.