

# CapSud study

## IRD research expertise and partners

**Development in Madagascar's Deep South,  
Some lessons from 30 years of development projects.**

**Bibliographical capitalisation study**

*Final version - September 2022*

**Authors:** Claire Gondard<sup>1,2</sup>, Tantely Andrianantoandro<sup>1</sup>, Diane Cachau<sup>2</sup>, Léo Delpy<sup>2</sup>, Isabelle Droy<sup>1</sup>, Benoît Lallau<sup>4</sup>, Nafissa Ralibera<sup>3</sup>, Miahy Ramiamanana<sup>3</sup>, Patrick Rasolofo<sup>1, 3</sup>, Mendrika Razafindraibe<sup>3</sup>

1. **UMI Source - IRD and Université Versailles-Saint-Quentin-En-Yvelines / Paris Saclay**
2. **Bordeaux Sciences Economiques - CNRS and University of Bordeaux**
3. **International Institute of Social Sciences, Antananarivo**
4. **Clersé - CNRS, SciencesPo Lille and University of Lille**

WITH THE CONTRIBUTION OF THE HUMANITY DEVELOPMENT PEACE NEXUS  
AND FUNDING FROM THE EUROPEAN UNION



## Funding and thanks

The CapSud research project "Le développement dans le Grand Sud malgache, Quelques enseignements de 30 ans de projets de développement. Etude de capitalisation bibliographique" was carried out with funding from the European Union Delegation to Madagascar (DUEM), through the European Development Fund (EDF) allocated to the programme "Appui au financement de l'agriculture et aux filières inclusives dans le Sud de Madagascar" (Afafi-Sud).

The CapSud study benefited from the support of all the members of the Humanity Development Peace (HDP) Nexus group, who provided access to the bibliographic resources produced by their institution and relevant to the study. The Humanitarian-Development-Peace Nexus technical group was set up to promote the coordination of development players operating in a number of convergence zones.

The final report on the CapSud research was presented at a Nexus DHP workshop held in Antananarivo on 18 November 2022.

**This document reflects the views only of the authors, and the European Commission cannot be held responsible for any use which may be made of the information contained therein.**

## CapSud study

### **Development in Madagascar's Deep South, Some lessons from 30 years of development projects.**

### **Bibliographical capitalisation study**

#### Contents

Contributions to the CapSud study .....	4
Introduction: The thwarted development of southern Madagascar .....	5
1. Identifying, referencing, classifying and summarising literature .....	10
2. Thematic analysis .....	16
3. Cross-sectional analysis: Perspectives on aid governance.....	54
Conclusion: Pursue and deepen the capitalisation dynamic to inform the common strategy of the Humanitarian-Development-Peace Nexus.....	74
List of bibliographical references included in the Capsud study.....	79

# Contributions to the CapSud study

**Head of expertise:** Claire Gondard

## **The authors of the capitalisation report**

- Introduction and conclusion  
Claire Gondard
  
- Thematic analyses
  - Water  
Claire Gondard and Patrick Rasolofo
  - Irrigated perimeters" insert  
Isabelle Droy
  - Agriculture-fisheries-livestock  
Diane Cachau and Benoît Lallau
  - Environment and climate change  
Diane Cachau and Léo Delpy
  - Food security and nutrition :  
Tantely Andrianantoandro, Léo Delpy and Claire Gondard
  
- Cross-sectional analyses
  - "Project mode  
Léo Delpy and Claire Gondard
  - Socio-anthropology  
Benoît lallau
  - Genre  
Isabelle Droy
  
- Methodological appendix  
Claire Gondard and Benoît Lallau

## **Coordination of the Zotero database and the Excel file for summarising the literature:**

Diane Cachau, Léo Delpy and Miahly Ramiamanana

## **Reading the resources, filling in the Excel summary file and writing the summary sheets:**

Tantely Andrianantoandro, Diane Cachau, Léo Delpy, Isabelle Droy, Claire Gondard, Benoît Lallau, Nafissa Ralibera, Miahly Ramiamanana, Patrick Rasolofo, Mendrika Razafindraibe

## **Production of code to automatically edit summary sheets from the Excel summary file**

Arnaud Natal. *The authors of the report would like to thank him warmly*

## Abstract

Madagascar's deep south is characterized by a succession of sometimes closely spaced, even concomitant, crises linked to agro-climatic conditions (droughts, locust invasions) or to the political situation, such as post-electoral crises. They occur against a backdrop of weakening lineage structures and multiple institutional failures accumulated over several decades: under-equipment of infrastructure and public services, poor governance, deteriorating security situation leading to decapitalization. This context exacerbates the vulnerability of populations and is conducive to the onset of food crises, when situations change more or less abruptly.

Despite numerous humanitarian and development projects over the past 30 years, these components of an ill-development equilibrium have not been overcome. Yet there is an abundance of literature, both academic and from project evaluations, which enables us to draw up an inventory of the causes of failures and successes. Capitalizing on these bibliographical resources is a major challenge for coordinating actions in southern Madagascar.

The aim of this study is to draw the main lessons from this abundant literature. To this end, we have compiled and analyzed an impressive corpus of both academic and grey literature. The aim of this study is to draw the main conclusions from this abundant literature. To do this, we have compiled and analyzed an impressive corpus of both academic and grey literature.

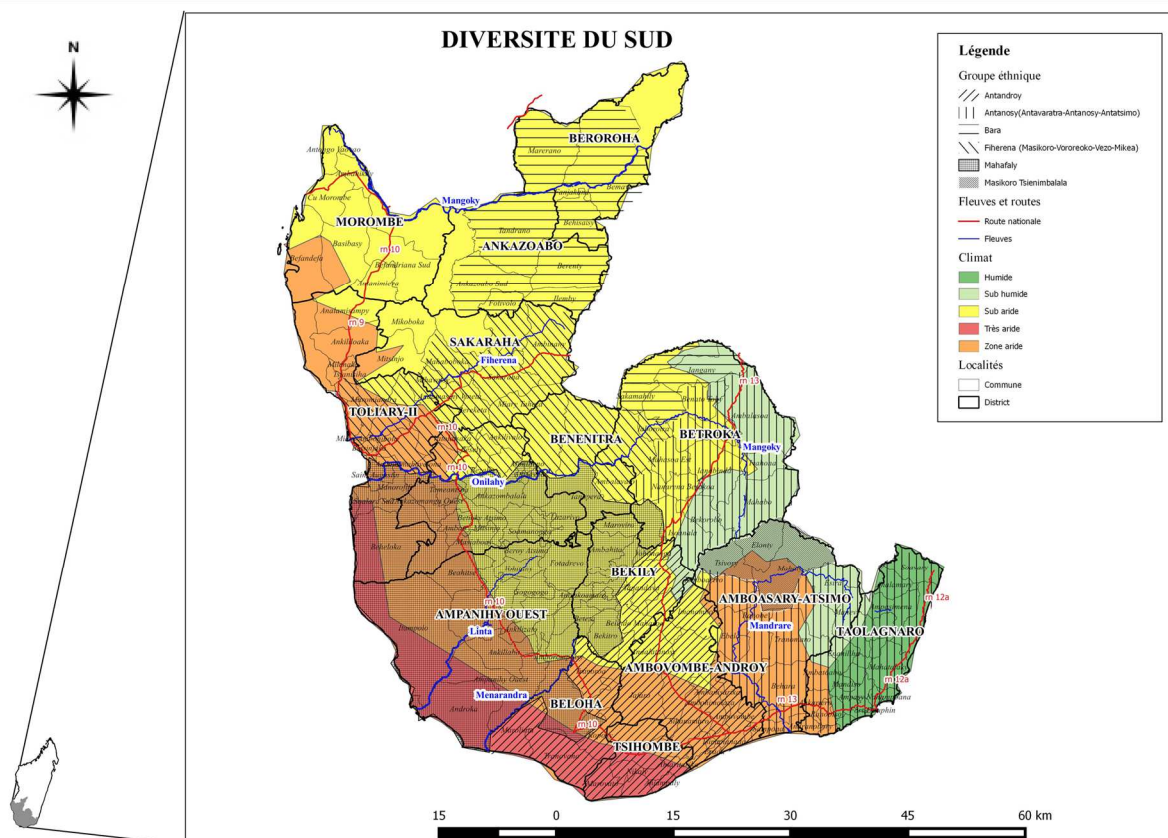
Keyword searches of the main bibliographic databases available online were supplemented by the transmission of reports and documents by development players in southern Madagascar. A total of 220 references were archived, referenced, summarised and analysed. The study first presents the main lessons to be learnt from 4 thematic entries, which play a key role in understanding the dynamics of development and the obstacles to development in southern Madagascar: (i) water, (ii) agriculture, livestock and fisheries, (iii) the environment and climate change, and (iv) food and nutritional security. A cross-sectional analysis of the corpus then shows that the socio-institutional approach is a key factor in explaining the failure or success of development projects. More specifically, the study provides information that enables us to understand the mechanisms underlying the 'project logic' and the consideration of social dynamics within the populations benefiting from aid, particularly those relating to gender issues.

# Introduction: The thwarted development of southern Madagascar

Even recently, a food emergency was declared for the south of Madagascar. The Amnesty International report (2021) sounds the alarm and calls for national and international mobilisation to meet the vital food and water needs of the population. Yet southern Madagascar is far from being a region without aid and development interventions. How then can we explain the recurrence of crises and the need, even today, for an emergency response?

Madagascar's Deep South encompasses the island's three southernmost administrative regions: Atsimo-Andrefana, Androy and Anosy. Beyond this apparent geographical neutrality, the expression also refers to a dynamic of poor development or development trap, which seems to resist the many national and international aid and development interventions. The Grand Sud can therefore be analysed as a particular development model, but it cannot be reduced to a homogenous whole insofar as the region is made up of multiple agro-climatic and socio-cultural characteristics that underpin its diversity (Figure 1).

**Figure 1: Diversity of Madagascar's southern regions**



Source: Authors, based on Gondard, Lallau, Andrianaivo, Delpy, Deguilhem, et Rasolofo, *Comprendre les systèmes locaux de protection sociale. Éléments d'analyse dans trois Fokontanydu Grand Sud Malgache*. 2021. hal-03160664v3, p.17

The region is characterised by the weakness of the main indicators of living conditions (table 1), which can be explained by the mutual reinforcement of multidimensional constraints.

Several reports take stock of the multi-dimensional difficulties facing the Deep South. Among these, special mention should be made of [Healy \(2018\)](#), who points the finger at climate change (dwindling rainfall, increasing droughts, more fires) and the region's political and geographical isolation since colonisation to explain the high rates of chronic poverty and difficulties in accessing vital resources (water, nutrition, health). [Morlat and Castellonet \(2012\)](#) set out GRET's strategies for action in a region 'on the sidelines of development', based on the observation that the environment is restrictive (agro-ecological constraints), the agricultural system fragile and food insecurity recurrent, the economic potential still limited, the region neglected by the State, the context structured by the assistance provided by foreign players, the highly specific structure of society and the complex relationships between the inhabitants and external players. The recent [ACAPS report \(2022\)](#), in turn, stresses the combination of agro-climatic and socio-institutional factors to explain food insecurity in the South.

**Table 1. Poverty rate, undernourishment and access to a water service in the three regions of the Grand Sud, as a percentage of the population**

Region	Poverty rate	Undernourishment	Access to a water service
Androy	96,7	75,1	26
Anôsy	85.4	75,7	26
Atsimo Andrefana	80,1	63	29
National	71,5		41

Source: Ministry of the Interior and Decentralisation (2019)

Inadequate attention to institutional aspects is one of the main reasons why a number of stakeholders in the area feel that development has failed. For example, one of the many reports published on the area by UNICEF describes it as a "graveyard of projects" ([UNICEF, 2011](#)). Key socio-institutional factors include the lack of coordination between development players ([Carimentrand, 2010](#)) and the competition between emergency and development ([Morlat and Castellonet, 2012](#)). It is precisely these issues that are at the heart of the objectives of the Humanitarian-Development-Peace Nexus, and to which this literature review aims to contribute.

### Contribute to the objective of coordinating the actions of the Humanitarian - Development - Peace Nexus

The deep south of Madagascar is characterised by a chronic and polymorphous crisis, both social and environmental, due to drought and the agro-climatic context, isolation and insecurity, as well as institutional failings. Despite a succession of humanitarian and development projects over the last 30 years, these components of a structural crisis have not been overcome. Yet there is an abundance of literature, both academic and from project evaluations, which can be used to draw up an inventory of the causes of failures and successes. Capitalising on these bibliographical resources is a major

challenge when it comes to coordinating actions in southern Madagascar, and is therefore one of the core activities of the Humanitarian - Development - Peace Nexus (HDP).

The aim of this study is to provide the Humanitarian - Development - Peace Nexus (HDP) with the means to mobilise this abundant literature in order to draw lessons from the past and use this as a basis for future development projects and programmes in southern Madagascar. In particular, it will help to capitalise on good practice and identify the factors holding back development in the far south.

To achieve this, two angles are proposed.

- Firstly, the aim is to develop a bibliographic resource base, to design an archiving and referencing tool and to propose a plan for the long-term survival and gradual updating of this base. The CapSud bibliographic resource base built up during the course of this appraisal could contribute to the coordination of stakeholders working in southern Madagascar by systematising the capitalisation of experience and expertise. The appraisal team archived, referenced and analysed a substantial corpus of 220 resources from academic literature (research articles, dissertations and theses) and grey literature (project documents, appraisal reports, project documents, planning documents and master plans).
- Secondly, the aim of the study is to analyse and capitalise on this corpus. The study is organised into 4 thematic entries, which play a key role in understanding the dynamics of development and the obstacles to development in southern Madagascar, and 3 cross-cutting entries, which provide a socio-institutional approach to understanding the factors behind the failure and success of projects. The thematic entries cover water, agriculture, livestock and fisheries, the environment and climate change, and food and nutritional security. The cross-cutting entries deal with the 'project logic', the need for a detailed understanding of the social dynamics within the populations benefiting from aid, and social dynamics from a gender perspective.

CapSud's expertise supports the objective of coordinating the players in the HDP Nexus through two main channels:

- providing a tool for archiving and referencing existing literature, enabling past experiences to be capitalised on, shared and disseminated;
- and providing an analysis to inform the joint strategy for the Deep South. The study will also lead to the formulation of recommendations relating to these two channels.

## Organisation of the CapSud expert report

Firstly, this study represents a considerable contribution in terms of referencing, classifying and making available on the bibliographic storage and management tool a substantial part of the literature available on development in the south of Madagascar, more specifically on the themes of Water, the Environment and Climate Change, Agriculture, Livestock and Fisheries, and Nutritional and Food Security. A total of 220 references have been archived, referenced and summarised, providing a valuable tool for coordinating future development initiatives, drawing on the lessons of past development experience.



Secondly, the study proposes a report bringing together key elements for capitalising on past and current development and emergency actions in southern Madagascar. The references used include both academic literature and grey literature from reports and capitalisation studies carried out in the area.

The deliverables of the CapSud appraisal are as follows:

- the database of bibliographic resources archived and referenced using the Zotero tool (all of these references are presented in the list of bibliographic references at the end of this report);
- an excel file containing summary descriptions of 220 bibliographic resources in the Capsud Zotero database (an extract is presented in the appendices);
- a summary sheet for each bibliographic resource in the Zotero CapSud database (an example is presented in the appendices);
- a methodological report setting out the methodology for building the Capsud Zotero database (the interim report, due in February 2022);
- this capitalisation report.

The summary sheets, the excel file summarising the bibliographic references and the interim report detailing the methodological choices are delivered in digital format. The CapSud bibliographic resource database can be accessed online using the Zotero tool.

This report is divided into three parts. The first part presents the tools developed to identify, reference, classify and summarise the existing literature. The second part proposes a thematic study capitalising on past development experiences referenced in the bibliographic database. The third part presents the cross-cutting themes. In conclusion, a number of proposals are made with a view to continuing the capitalisation process.

# 1. Identifying, referencing, classifying and summarising literature

This section presents the main methodological choices made for the literature review, archiving, referencing and capitalisation<sup>1</sup>.

## 1.1. Identify existing literature on development policies and projects in the south of Madagascar

### 1.1.1. Searching for documents

The documents were searched using a combination of two strategies.

Firstly, we asked all the member organisations of the Humanitarian, Development and Peace Nexus to send us the documents produced by their institution on the key themes of the study (water, food security, environment and climate change, crop-livestock-fisheries). This initial approach enabled us to collect 176 documents, including 117 reports, 34 scientific articles and book chapters, and 25 academic works.

Secondly, we also developed a complementary document search strategy. To do this, we carried out complementary searches in Horizon (the IRD database, which provided access to a number of non-digital documents), Google Scholar, Cairn (<https://www.cairn.info/>), MadaDoc, MadaRevue, MadaScience, the online thesis site of the University of Antananarivo, Hayzara, and a few other common sites:

<https://www.researchgate.net/>; <https://www.persee.fr/>; <http://www.revues.org>;  
<http://www.erudit.org>.

These documents were searched using keywords previously identified by the team. These keywords were identified in such a way as to take account of the main difficulties encountered in southern Madagascar: Southern Madagascar, nutrition, water, agriculture, livestock farming, fisheries, socio-anthropology, natural resources, climate change. This second approach enabled us to collect 51 additional documents, including 8 reports, 38 articles and chapters in scientific works, 4 academic works and a video resource.

The distribution of bibliographic resources in the CapSud database according to the resource identification strategy and the nature of the resource is given in table 2, while table 3 gives the thematic distribution of resources.

---

<sup>1</sup> This section summarises and updates the interim report on the methodology, which was delivered and presented to the nexus group in February 2022.

**Table 2. Breakdown of bibliographic resources included in the database by identification strategy and type of resource**

	Collecte des ressources auprès des membres du Nexus HDP	Recherches sur les bases de données usuelles (1)	Total
Articles scientifiques et chapitres d'ouvrages	34	38	72
Rapports	117	8	125
Mémoires et thèses	25	4	29
Ressource vidéo	0	1	1
<b>Total</b>	<b>176</b>	<b>51</b>	<b>227</b>

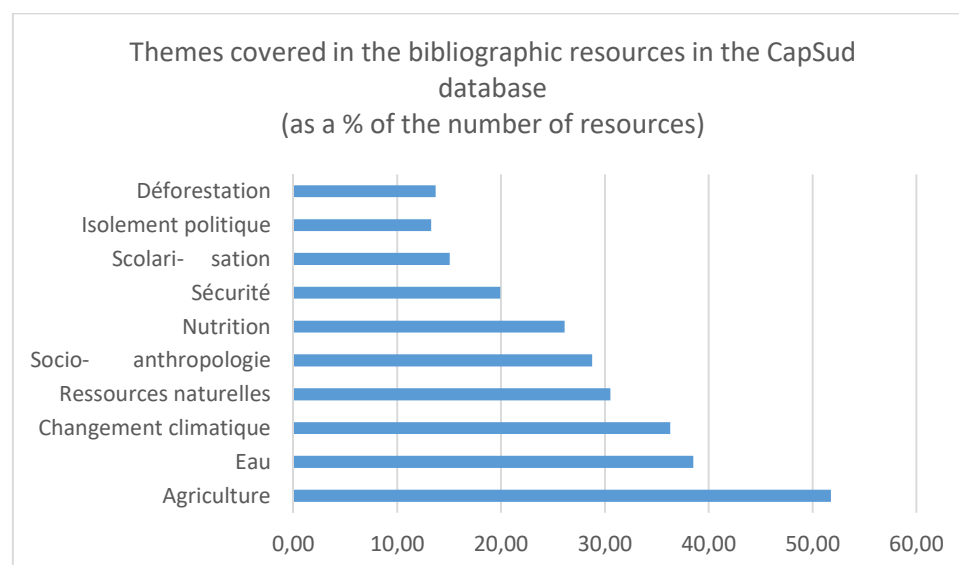
Notes: Les bases de données consultées sont Horizon (base de données IRD qui inclut des documents numérisés), Google scholar, Cairn, Hayzara (documents académiques Malagasy), Mada Doc, MadaRevue, MadaSciences, Research Gates, Revues.org et erudit.org

Source: CapSud bibliographic database, Authors

**Table 3. Thematic breakdown of resources**

	Climate change	Water	Security	Agriculture	Political isolation	Schooling	Natural resources	Socio-anthropology	Deforestation	Nutrition	TOTAL
Workforce	81	87	44	117	30	34	68	65	30	59	226
%	35,84	38,50	19,47	51,77	13,27	15,04	30,09	28,76	13,27	26,11	

Note: The same resource may address several themes. The % total is therefore meaningless and is not calculated.



Source: CapSud bibliographic database, Authors

### 1.1.2. Selecting the most relevant resources for the literature review

Having carried out this two-pronged approach, we selected the most relevant documents for understanding our research subject. To do this, we applied several selection criteria: on the one hand,

criteria relating to the geographical scope (Atsimo-Andrefana, Androy and Anosy, in accordance with the administrative definition of the Grand Sud) and timeframe (from 1990 to the present day), and on the other hand criteria relating to the robustness of the methodology on which the bibliographic resource is based. Some resources are poorly documented, so we produced a critical analysis of academic documents (sources cited, data explained, methods specified, degree of scientificity). The Excel literature summary database includes a column justifying the reasons for non-inclusion in the literature review. However, these resources not included in the literature review are kept in the CapSud bibliographic database. Table 4 shows the breakdown of resources retained and not retained.

**Table 4. CapSud bibliographic base resources retained and not retained in the literature review**

	Retenues	Non retenues	Total
<b>Articles scientifiques et chapitres d'ouvrages</b>	53	19	72
<b>Rapports</b>	109	16	125
<b>Mémoires et thèses</b>	15	14	29
<b>Ressource vidéo</b>	0	1	1
<b>Total</b>	<b>177</b>	<b>50</b>	<b>227</b>

*Source: CapSud bibliographic database, Authors*

The summary of the literature identified therefore focuses on the 178 resources selected on the basis of their methodological robustness.

## 1.2. Synthesising the literature

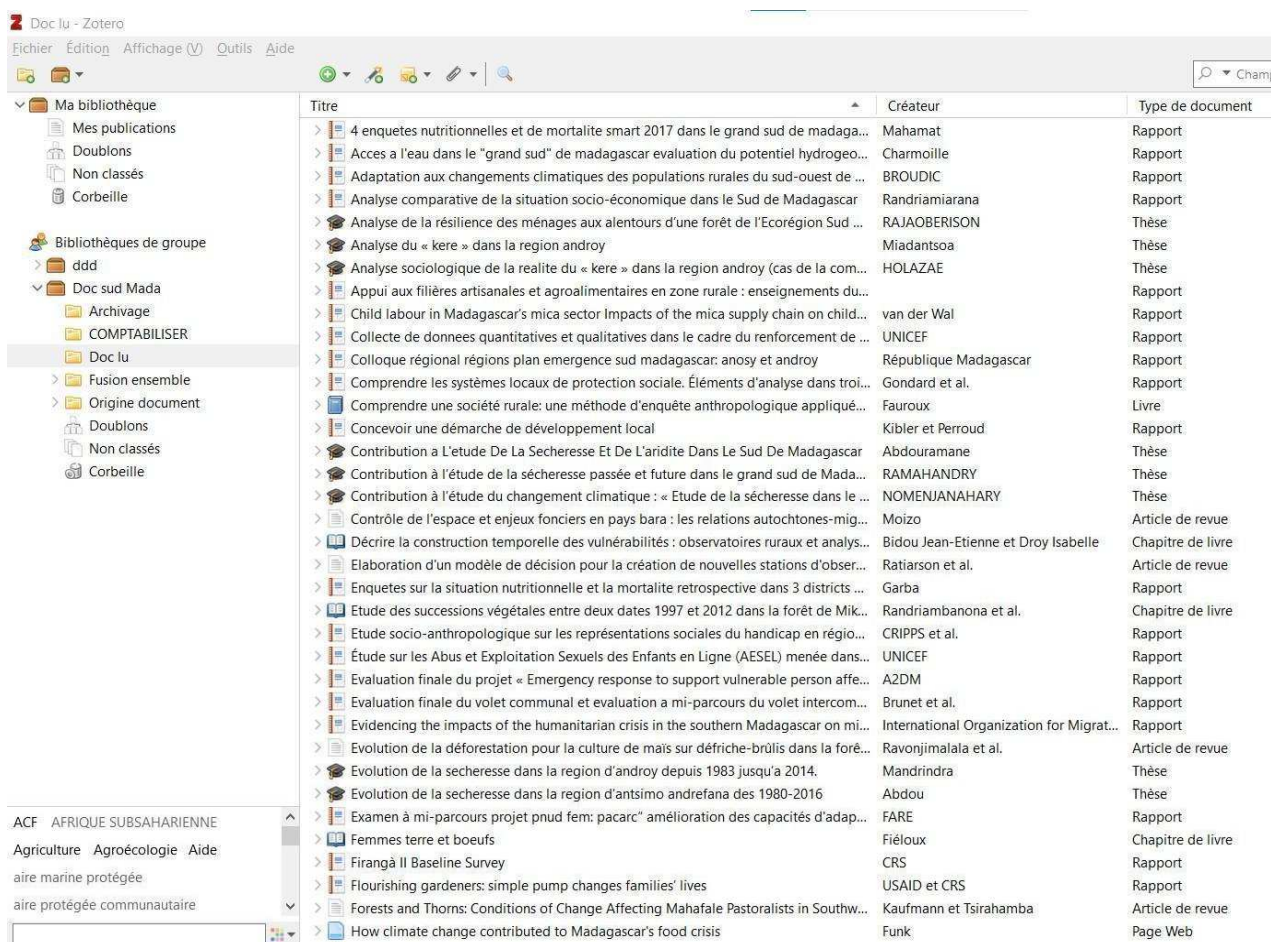
### Summary Excel document

After applying the selection criteria, we produced a summary sheet for each of the 178 documents selected for analysis. This provides an overall understanding of the document studied. It provides both a summary of the document (title, author, abstract) and a critical analysis of the main findings of the article. The reading sheets also enable the various resources referenced to be classified according to several criteria: difficulties in the south, type of analysis, geography of the intervention. The summary excel document is one of the deliverables of the appraisal.

### Summary sheets for each resource, automatically extracted

In order to facilitate the construction of individual summary sheets, we set up a method for automatically extracting the summary sheets from the Excel spreadsheet and transforming them into single sheets in Word. The summary sheets are appended to this report.

**Figure 2: Screenshot of the Zotero bibliographic resources database**



### 1.3. Reference, classify and archive existing literature

Referencing is carried out by combining the keywords listed in table 4 with the Iso 690 standard (see appendices). These keywords are entered as markers in the Zotero database and can be searched by theme.

**Table. 4. List of Zotero tags (keywords) in the CapSud database**

<i>Marker</i>	
<b>Location</b>	Study of the Greater South
	Ambovombe
	Androy
	Anosy
	Atsimo Andrefana
	Bekily
	Beraketa
	Betioko

Beza Mahafaly  
Bara Country  
Mahafaly region

---

**Socio-cultural groups**

Antandroy  
Antanosy  
Bara  
Mahafaly  
Masikoro  
Sakalava  
Vezo

**Themes**

---

Agriculture  
Project analysis  
Socio-political analysis  
Climate change  
Agro-ecological conditions  
Living conditions  
Deforestation  
Water  
Breeding  
Environment  
Project assessment

Agricultural and agri-food sectors  
Type

Risk and disaster management  
Infrastructure  
Irrigation  
Kéré  
Microfinance  
Migration  
Means of subsistence  
Fishing  
Natural resources  
Rites and religions  
Security

Food and nutritional security  
Socio-anthropology  
Information system  
Vulnerability

---

**Type of document**

Diagnosis  
Academic document

Planning document  
Scientific publication  
Project report

*Source : Authors*

The tool chosen for archiving the reference library is **Zotero**, which is free, open source, easy to use, collaborative and participative. Because of these characteristics, it seems to meet all the needs identified by the Nexus. All Nexus members will have easy access to the archived references, and certain people identified by the review committee will be able to implement the library in compliance with the referencing standards established as part of the appraisal.

"Zotero is a free, open source reference management software that is part of the Web 2.0 philosophy.<sup>2</sup> It can be used to manage bibliographic data and research documents (such as PDF files, images, etc.). Its main features include integration with the web browser; the ability to synchronise data from several computers; the ability to generate citations (notes and bibliographies) for users of LibreOffice, Microsoft Word, NeoOffice, Zoho Books and OpenOffice.org Writer by installing a plugin.<sup>3</sup> The software was developed by the *Center for History and New Media* (CHNM) at George Mason University". (Wikipedia)

Getting to grips with Zotero is simple, and there are a number of free tutorials available to make it easier. For example, users can refer to the Université de Bordeaux page devoted to Zotero tutorials: <https://bibliotheques.u-bordeaux.fr/Se-former/Les-tutoriels/Les-tutos-Zotero>. Finally, Zotero is a collaborative and participative tool, so it can be used to work in groups on a common reference library (see the dedicated tutorial: <https://www.youtube.com/watch?v=i7MfHvXQRw4>).

For the time being, the **Doc Sud Mada** group, set up for the work of the team of experts, has been created with "private" status, so it is hidden and not accessible on the Internet. The status of the group can be changed at any time by the Nexus, for example to "Public, closed membership". The group is then visible on Zotero, but the group manager must authorise the connection. When the Doc Sud Mada group is transferred to the review committee (at the same time as delivery of the final report), the management options will have to be modified: users should not be able to modify references and records; only managers should retain these modification rights. The review team recommends that the IISS, which is involved in the review, should continue to manage the database, with occasional support from a professional documentalist.

## 2. Thematic analysis

Madagascar's Deep South encompasses the island's three southernmost administrative regions: Atsimo-Andrefana, Androy and Anosy. Beyond this apparent geographical neutrality, the expression also refers to a thwarted development dynamic, which seems to resist the many national and international aid and development interventions. The aim of this study is to identify, on the basis of the abundant literature on Madagascar's Deep South, the factors explaining this balance of poor development and the possible factors that could upset this balance, in order to inform the Nexus's stakeholders.

In this second section, we propose an analysis of the major themes addressed in the literature: water; agriculture, livestock farming and fisheries; the environment and climate change; and food and nutritional security.

### 2.1. Water resources

---

#### Key resources on water

---

- CHARMOILLE Arnaud (2016), Access to water in the Grand Sud of Madagascar - Assessment of hydrogeological potential in the intervention zones of the NGO AVSF - Projects: Zoloke, Sohavelo and Fanantenana
  - Rakotondrainibe (2020): Concrete solutions for improving vovos and ponds to secure access to good quality water (descriptions of vovos and ponds,
  - Rakotondrainibe, H. (2022) 'Partage d'expériences sur la maîtrise totale de l'eau avec les communautés de base'.
  - République de Madagascar et Agence nationale de l'eau (2003), Schéma directeur de mise en valeur des ressources en eau dans le Grand Sud de Madagascar, Document de planification, République de Madagascar.
- 

#### 2.1.1. Putting water issues in the Grand Sud into perspective

The far south of Madagascar is an arid to sub-arid zone, characterised by a network of non-perennial rivers and drying winds. Its development therefore depends on controlling access to water to satisfy multiple needs, whether domestic, sanitary or agricultural. It is therefore not surprising that almost all written reports on the South of Madagascar mention the water issue, and that the various plans drawn up for the recovery (BNGRC, 2016), development (Master Plan 2003) and even emergence (Republic of Madagascar, 2021) of the South have a section dedicated to the water question. Access to quality water plays a pivotal role, influencing living conditions and livelihoods *through* a number of channels, including people's health (hygiene, mother and child health), nutrition (poor quality water, diarrhoea,



reduced nutritional intake), agricultural production (dual effect on self-consumption and on the purchase price of foodstuffs) and livestock farming.

The various development and planning programmes implemented since the 1990s have placed great emphasis on water management. The tensions between water resources and meeting multiple water needs, which were clearly identified as early as 2003 (EHA master plan: [Republic of Madagascar and Agence nationale de l'eau, 2003](#)), are exacerbated by population growth, problems of insecurity, which restrict the movement of herds to reach the most suitable pastures depending on the season, and agro-climatic conditions, which are becoming more complex as a result of climate change<sup>2</sup>. However, the recent humanitarian crisis in Madagascar, like those that preceded it, demonstrates the lack of control over water, and emergency interventions remain vital. Limiting emergency responses means that access to water must be managed upstream, with a view to development.

Access to water is therefore a twofold issue, both in terms of the area's development, since limitations on access to water are a factor in the area's economic stagnation ([MRC, 2016](#)), but also in terms of human rights, as Amnesty International (2021) strongly emphasises, calling for the right to water to be respected in its appeal to combat famine in southern Madagascar. To meet these two challenges, we need to develop water management in the region.

To achieve this, technical solutions (2.1.2.), adapted to the multiplicity of water needs and the local availability of water resources (2.1.3.), must be combined with institutional solutions (2.1.4.) to promote the sustainability of responses.

### 2.1.2. A wide range of possible responses to develop and secure access to water

Various documents list possible solutions for developing access to water in the Grand Sud. Among these, the [Rakotondrainibe](#) summary documents (2020 and 2022) are particularly noteworthy.

[Rakotondrainibe \(2020\)](#), in a very complete and precise document, lists and maps the systems used to access water in the Androy Region. Table 2 below summarises the water access systems present in the Grand Sud, the main problems affecting them and the existing technical solutions to remedy them. [Charmoille \(2018\)](#), in a study carried out for ACF to identify water resources in Mahafaly country, also stresses the need to build and improve wells and boreholes to make them sustainable, and to take account of the salinity of the area's water by installing mobile solar distillers that can be adapted to the needs and resources of rural areas. He points out that traditional wells (*vovo*) are not sustainable (increased salinity); insists on the population's preference for surface water (*ranovato*) whereas groundwater is less polluted. He advocates the construction of wells and boreholes, with a thorough upstream study for depths of 100 metres or more, where hand pumps are no longer sufficient. Such wells require regular maintenance by qualified personnel. [Charmoille \(2018\)](#) recommends rainwater harvesting, but **on an** individual rather than a village scale.

The solutions proposed for access to water range from very low-capital solutions (such as fitting *vovos* with blue recovery cans) to very high-capital solutions (pipes). It should be noted that the most capital-intensive solutions make the systems dependent on external support for maintenance. In addition,

---

<sup>2</sup> On this point, see the dedicated section in Cross-sectional analysis.

exposure to theft is potentially high, in a region characterised by growing insecurity. For these two reasons, there is a risk that the most capital-intensive solutions will not last long.

Of all the solutions proposed, the solutions to be implemented specifically to ensure access to water in each locality of the Grand Sud must also be adapted according to the uses of the water.

**Table 5. Water access systems and solutions for improvement**

Les systèmes d'accès à l'eau	Les problèmes qui se posent	Les solutions proposées
Les Forages et Puits munis de Pompes à motricité humaine	Des forages à grande profondeur donc débit trop faible pour les pompes à motricité humaine, salinité, sous écoulements	Mini-réseau à pompage solaire / Traitement de la salinité par nanofiltration / Adduction d'Eau Potable (AEP) solaire captant le
Les adductions d'eau par pompage solaire		
Les pipes	<p>Le pipe Ouest (Ampotaka-Beloha-Marovato-Faux cap) est fonctionnel, mais nécessite un renforcement de capacité au niveau de la gestion;</p> <p>Le pipe Est (Amboasary-Sampona-Maroolomainty) n'est pas fonctionnel;</p> <p>Le pipe Nord (Bemamba-Ambovombe-Antaritarika) dispose d'une étude de faisabilité mais les travaux ne sont pas réalisés.</p>	<p>Assurer un fonctionnement permanent (pompage mixte), renforcer l'organisation de gestion permettant à l'Etat de subventionner l'accès à l'eau potable (très faible capacité de payer l'eau des populations rurales du Sud), augmenter le nombre de points de piquage notamment au niveau des piquages illicites (en situation d'urgence comme le Kere, négocier avec les gestionnaires pour permettre aux populations en situation de détresse à accéder gratuitement à l'eau et dont les frais de</p> <p>Résoudre les problèmes de fourniture des pompes solaires, faire la mise en marche du système, réparer toutes les fuites d'eau éventuelles, mettre en place une organisation permettant à l'Etat de subventionner l'accès à l'eau potable vu la très faible capacité de payer l'eau des populations rurales du Sud, assurer fonctionnement permanent en utilisant en même temps le</p> <p>Trouver un bailleurs de fonds pour réaliser les travaux.</p>
Les Vovos (puits traditionnels) Mares (sihanaka) et Ranovato (impluvium naturel dans les formations calcaires) plus ou moins permanentes alimentées par les pluies	Eau polluée, forte évaporation/ Mares durables / faibles débits	Pas Captage par bidon bleu pour les vovos et enterré plein sable) pour les mares et ranovato REEPS (Réservoir
Les Collectes d'eaux de pluies par les toits, en général par familles	Les volumes de stockage sont faibles; les eaux sont très polluées	Calculer le volume de stockage en fonction de la pluviométrie / Utiliser un filtre au-dessus du réservoir qui peut être un bidon
Impluvium collectif construit par l'état	Les eaux son très polluées	Recourir au REEPS
Les captages de sous-écoulement des rivières sèches (sakasaka) par les puits à drains, les barrages sous terrains		Réaliser ces 3 types d'ouvrage d'exploitation de sous-écoulement ( puits et forages, puits à drains,barrages souterrains,dans toutes les zones où cela est faisable, indiquées sur la carte jointe en utilisant la BDEAH-sesam-Gire.

Source: Authors, based on Rakotondrainibe (2020)

### 2.1.3. Solutions to be adapted according to water use

While water needs are varied, the traditional distinction between agricultural and domestic water is eminently relevant, as the underlying issues (availability and quality) do not respond to the same constraints. In the case of agricultural water, the aim is to limit water requirements by transforming farming systems and optimising resource management. As far as domestic water is concerned, regular

and sustainable access to quality water is an incompressible need and a human right. Finally, integrated water resource management (IWRM) makes it possible to combine a diversity of supplies and uses at catchment level.

### **Agricultural water: limiting water requirements and optimising resource management**

Firstly, by transforming farming methods, it is possible to limit agricultural water requirements through conversion to agro-ecological farming. This point is developed in the dedicated thematic section. Secondly, solutions for capturing groundwater and river water during rainfall can be developed ([Rakontondrainibe, 2020 and 2022](#)). Irrigated perimeters can be designed and maintained where possible (see dedicated insert below). Thirdly, the aim is to encourage the finest possible management of water resources according to local characteristics. The development of micro-irrigation systems for the development of market gardening activities, combined with boreholes operated by hand pumps and appropriate storage, have made it possible to develop market gardening activities and promote food diversity, income diversification and the empowerment of women.

### **Water for human consumption (drinking and hygiene): incompressible needs for high-quality water**

The close link between drinking water quality and nutrition is established through the two channels of agricultural production and food hygiene ([CAETIC Développement, 2018](#); [UNICEF, 2016](#); [Primature et al., 2017](#)).

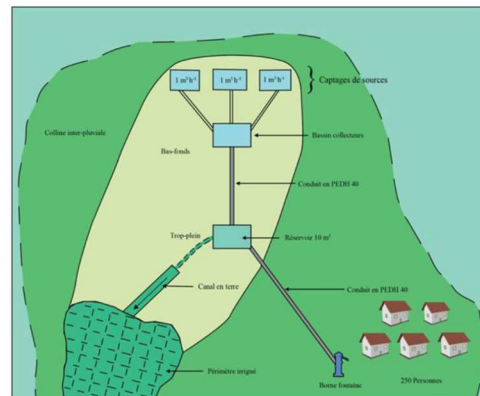
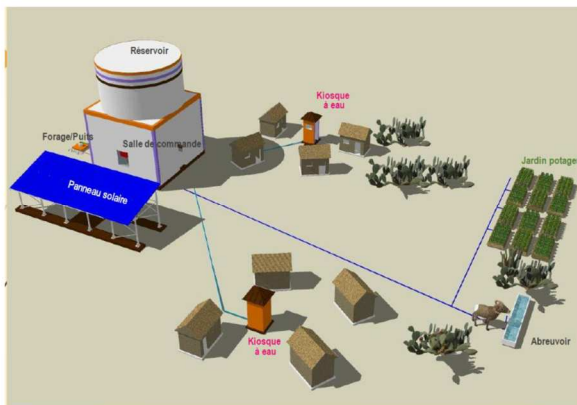
The supply of water for human consumption is often precarious, as the water concerned is polluted (vovos, ranovatos, impluviums, unfiltered rainwater harvesting) or expensive, particularly in times of drought. A large proportion of households rely on the informal system of carts for their water supplies. Among the emergency NGOs, Medair has helped to perpetuate and professionalise the informal water distribution system using carts (in particular, by distributing cans with lids for safer transport and to reduce the risk of water pollution, and by training micro-accountants to ensure regular maintenance of the capital, carts and draught oxen). Water is also distributed free of charge in tanker lorries in times of crisis. The lorries are also used to supply basic health centres (Medair, Alimentation en Eau dans le Sud and UNICEF). Finally, training in simple methods for limiting the risks of water pollution in domestic storage can be promoted.

### **Integrated water resource management**

Integrated Water Resources Management (IWRM) allows the development of Multi-Use Systems (MUS) and the exploitation of water for multiple purposes at the relevant catchment level. This makes it possible, at catchment level, to identify available water resources and organise their capture, storage, conveyance and distribution to meet multiple water needs. As shown in Figure 3, IWRM makes it possible to develop a system combining several of the water resource abstraction systems presented in the first section and to link it, downstream of the conveyance system, to a Multi-Usage System (MUS).

To ensure the sustainability of the water supply systems put in place, sound water governance is needed to manage the multiple needs and diversity of supply sources. Good local ownership of the systems is also essential.

### **Figure 3. Principle of Integrated Water Resources Management: multi-use systems and multi-purpose water exploitation**



Source: Rakotondrainibe, 2022, 21

## 2.1.4 Water governance and local ownership of water resource management and distribution systems

How should water services be managed in practice? Water governance, solidly underpinned by legislation, is still struggling to become a reality. The local level is therefore a major issue, and the inclusion of water supply projects in local standards must be a priority for projects that wish to establish lasting changes.

### Community management, private management and public management

Between community management, private management and public management, what kind of governance should be promoted for the water sector? While in the 2000s the Malagasy government tended to favour community-based water management (Marcus, 2007), the current trend is to promote private-sector water management. However, the article by Marcus (2012), which examines the propensity to pay for water, although showing that this propensity increases in times of crisis, is a reminder of the low ability to pay of households in the Grand Sud, where poverty levels are particularly high.

The different players in the water sector each have a different rationale, ranging from a market rationale to a public service rationale. However, Rakotondrainibe (2022) insists on the coordinating role of public authorities and strongly reminds us of the imperative need to apply the legislative framework for water effectively.

### Coordination of water stakeholders: the role of the State and the Basin Agency

The legislative framework for water sets out the missions of the various levels that administer the water sector, in particular that of the State and decentralised authorities, and management at catchment basin level as part of a landscape approach that enables integrated management of water resources. The management of the water sector is governed by two decrees: decree no. 2003-193 on the operation and organisation of the public drinking water service and domestic wastewater

treatment<sup>3</sup> and decree no. 2003-191 on the creation of basin agencies and setting out their organisation, powers and operation. Proper application of these decrees would enable the State to regain its essential role in promoting sustainable quality water supply for the entire population, since its primary role, according to article 12 of decree 2003-193, is to ensure the planning and development of the public water service. In addition, decree 2003-191 structures the relevant bodies for integrated water resource management (IWRM) at the relevant river basin level and decrees the creation of the Basin Agency at regional level (*faritany*), with the means to effectively structure water supply and distribution at this level. The Basin Agency draws up the master plan for the development of water resources in collaboration with and under the coordination of ANDEA. Water development and management master plans are proposed by the Basin Committees to the Basin Agency. The master plans take into account the main programmes drawn up by the public authorities and define, in a general and harmonised manner, the objectives for water quantity and quality and the measures to be taken to achieve them. Article 17 of decree 2003-191 provides a framework for effective decentralisation and the full involvement of the population.

In the wake of these decrees, the national master plan for the water sector ([Republic of Madagascar and Agence nationale de l'eau, 2003](#)) offers a detailed and informed diagnosis of the water situation in southern Madagascar, identifying the diversity of needs and resources and proposing courses of action. However, in the wake of successive recent crises, it has to be said that the water situation in southern Madagascar remains a key issue for development and the satisfaction of basic needs. This point is once again highlighted as a priority in the recent summary document produced following the *Emergence* symposium organised by the government ([Republic of Madagascar, 2021](#)) and, although technical solutions are put forward<sup>4</sup>, they focus on major projects and do not address the decisive issues of governance, management and social ownership, which are essential for the practical implementation of appropriate solutions and their sustainability.

### Issues of local ownership

At a local level, it is necessary to integrate local norms and social structures to ensure that local solutions are sustainable, by encouraging the ownership, participation and support of local residents. In this respect, ACF's socio-anthropological study ([Lazzarini, 2012](#)) reminds us that water, because of its symbolic purifying function, is surrounded by many taboos. In addition, infrastructure management is difficult because of the ownership and responsibility arrangements that surround the notion of

---

<sup>3</sup> Decree 2003-193 sets out the role of the State in the water sector (article 12): (i) Ensure the planning and development of the public water service; (ii) Monitor, lead and co-ordinate the investment and financing policy of the public water service; (iii) Set the standards and technical specifications applicable to the various water systems by regulation; (iv) Assume the responsibility of delegated project manager as long as the municipalities do not meet the eligibility criteria for project management; (v) Coordinating, from an administrative, technical and financial point of view, the technical assistance that communities need to manage small rural drinking water supply systems and to ensure the development of water and sanitation in rural areas. Decree 2003-193 also sets out the role of the municipalities (article 14) as contracting authorities for the public water supply service.

<sup>4</sup> Avenues for action on water proposed by the *Emergence* conference in June 2021 ([Republic of Madagascar., 2021](#)): (i) Produce drinking water and water for agriculture using the drip system in 860 fokontany through the Mahavelona project; (ii) Desalinate sea water at 425 sites through the Mahamamy project; (iii) Building pipelines from the Ifaho River (Sarisambo, Ranopiso, Sampoina, Amboasary, Ambovombe) and other routes, in particular Ampotaka - Tsihombe, Mandrare - Sampona and Bemanda - Antaritarika; (iv) Undertake high-flow drilling activities with multiple use of water, at the rate of 5 boreholes per district; (v) Set up the "Water Bagging" project, producing 1,500 litres of water per day, ½ l per bag.



collective and common good, which means that water management systems need to be properly integrated into local social structures. An example of integration into local norms is provided by a UNICEF sanitation project (2015) focusing on CLTS (*Community Lead Total Sanitation*) and the fight against open defecation. The project was designed with the support of the lineage authorities and the fokontany authorities to create a *dina* (a standard established at fokontany level, compliance with which is monitored by a *dina* implementation committee and is accompanied by penalties in the event of non-compliance).

### 2.1.5. Conclusion on the water theme

In order to develop access to water in the deep south of Madagascar, the literature describes a range of solutions that have already been or could be implemented. However, the diversity of water requirements and local configurations in terms of needs, constraints and supply opportunities call for locally adapted solutions, both at a technical level (status of water resources, existing supply systems and technical means of improving and supplementing them) and at an institutional and social level (water governance and social engineering of projects). This is the only way to ensure that both agricultural and human water needs are met in the long term and that emergency interventions are no longer necessary or, at least, remain truly exceptional (for information systems designed to trigger a state of humanitarian emergency, see the section on Food and nutritional security).

#### Key facts about water

**Key findings**

1/ Access to quality water plays a pivotal role in the development of southern Madagascar. It determines living conditions and livelihoods through a number of channels, including people's health (hygiene, mother and child health), nutrition (poor quality water, diarrhoea, reduced nutritional intake), agricultural production (dual effect on self-consumption and food purchase prices) and livestock farming.

2/ Emergency humanitarian responses to the water issue are regularly necessary because an effective water access service has yet to be put in place.

3/ A wide range of technical solutions are available to improve and complement existing water supply systems.

- Some solutions are not very capital-intensive (fitting vovos with blue recovery cans), while others are highly capital-intensive (pipes).
- The most capital-intensive solutions offer high potential throughputs, but make the systems dependent on external support for maintenance and are highly vulnerable to theft and damage to equipment.
- The least capital-intensive solutions, with more limited throughputs, encourage autonomy.

3/ Relevant technical solutions differ according to water use (agricultural water and domestic water), as the underlying issues (availability and quality) do not respond to the same constraints. Integrated

Water Resource Management (IWRM) makes it possible to combine a diversity of supplies and uses at catchment level.

4/ The organisation of water services, from collection to storage and distribution, remains to be put into practice.

- The question of water governance between community management, public management and private management must take into account the very low capacity to pay for water services due to the context of extreme poverty.
- Legislative texts do exist: (i) decree 2003-193 setting out the role and powers of the administrative and deconcentrated levels; (ii) decree 2003-191 creating basin committees and agencies, structures making it possible to oversee the production of master plans at the relevant catchment area level.
- The organisation of services providing sustainable access to water remains to be achieved.

5/ At local level, the integration of water and sanitation systems into local norms and social structures encourages the sustainability of local solutions through ownership, when the participation of local residents is effective (to find out more, see the dedicated entry in the "Cross-sectoral analysis" section of this document).

### **A few recommendations**

- Drawing on detailed analyses of water resources and the state of existing supply systems
- Adapting local solutions to multiple resources and needs
  - Agricultural water: limiting water requirements by converting farming systems to agro-ecology (see section on "Agriculture, livestock and fisheries").
  - Domestic water: meeting incompressible needs for good quality water
  - Develop an integrated water resource management (IWRM) plan, based on a diagnosis of local resources and needs, to ensure that water is captured, stored and distributed in multi-use systems while limiting conflicts of use.
- Favour solutions that enable autonomy and limit external dependence (parts, maintenance, etc.): favour low-capital-intensive solutions.
- Strengthening water governance, sector coordination and social ownership
  - Coordinate the decentralised implementation of solutions, at catchment basin level, with regional equalisation schemes, to ensure equity between regions and the satisfaction of water needs for all.
  - Provide effective material and human resources so that the local coordinating structures can fulfil their missions (local authorities, river basin agency).
  - Given the levels of poverty in the South, favour an approach in terms of human rights (limiting the price of water) while ensuring efficient management of the water service.
  - Ensuring integration into local social standards and structures (social engineering)

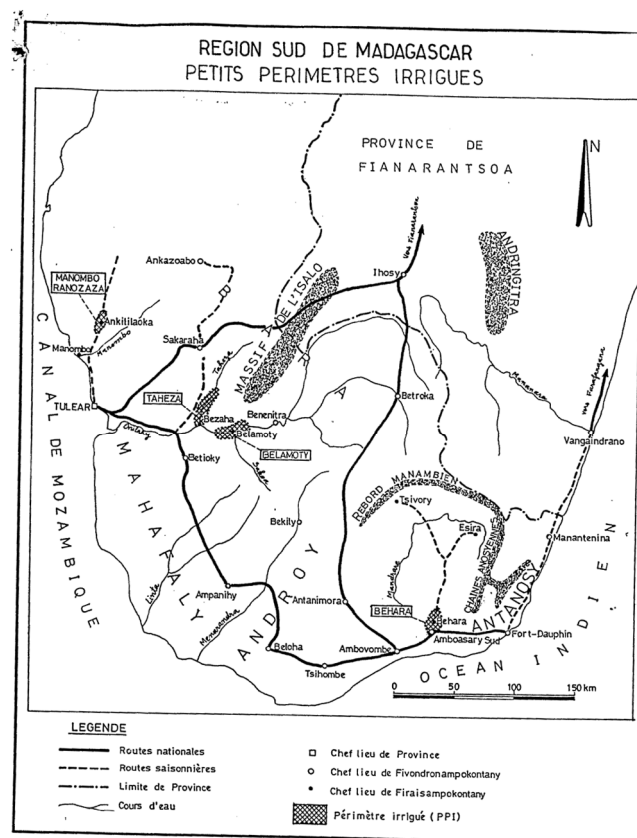




### *Inset: Irrigated areas*

In arid zones, the development of irrigated agriculture represents significant potential, provided the water resources used are renewable. According to the FAO, "an irrigated perimeter can be defined as an area of farmland on which irrigation infrastructure has been built. The field is often devoted to rice growing, but it may be suitable for other crops in the off-season: beans, cowpeas, market gardening, etc. Development and irrigation are crucial for these fields, whose production depends on water and its availability". In the Grand Sud region, several irrigation schemes have been in place since the colonial period, based on gravity-fed irrigation from springs and rivers (i.e. without pumping from the water table).

**Figure 4. Small irrigated perimeters in southern Madagascar**



Source: Droy, I. (1992). *Les périmètres irrigués du Sud de Madagascar: Le contexte socio-économique du transfert de gérance*. 48.

- **Perimeters in the South-East region, in the Haut Mandrare basin**

"The irrigable potential of the Upper Mandrare Basin has been known for a very long time. The Upper Mandrare Basin, divided into six sub-watersheds that feed the Mandrare, enjoys good rainfall (normally between 800 and 1,100 mm) compared with other areas in the far south of Madagascar. The soil in the valleys is fertile and lends itself to irrigated rice growing, an agricultural activity practised by 60% of the area's inhabitants. Some of the hydro-agricultural facilities date back to colonial times. Once known as the "rice granary" of southern Madagascar, the productive potential of the Upper

Mandrare Basin had fallen sharply over the years" (Thierry and Leguevel, 2007). As the infrastructure deteriorated, projects were launched in the 1980s and 1990s to rehabilitate the dams (Operation Microhydraulic of the European Development Fund or Operation Androy financed by the European Union). This was accompanied by a reform of the management of the perimeters with the setting up of water users' associations in a complex socio-economic context (Droy, 1992, Behara perimeter) which partly explains the difficulties or even the lack of maintenance of the infrastructures due to conflicts of power. These management problems are compounded by the region's isolation, which limits the realisation of its productive potential (Shapir et al. 2007).

It was against this backdrop that the Haut Mandrare Basin Development Project was implemented by IFAD over a 12-year period, from 1996 to 2008, at a cost of \$30 million, with the aim of increasing rice production by developing and rehabilitating perimeters, developing new sectors, creating farmers' organisations, getting women heavily involved in micro-projects, and building infrastructure (health, roads, livestock). The final evaluation carried out in 2009 concluded that poverty had been reduced and agricultural production increased, but also highlighted the structural problems associated with being landlocked, the weakness of public institutions and the inadequacy of social services. It has not been possible to find recent data on the results of this operation 13 years after the end of the intervention, but it would certainly be a relevant study to carry out in a context of reflection on development operations.

Figure 5

**Madagascar**  
 Carte des zones d'intervention du PHBM  
 PHBM I (1996 - 2001) et PHBM II (2001 - 2008)



Les appellations figurant sur cette carte et sa représentation graphique ne constituent en aucun cas une prise de position du FIDA quant au tracé des frontières ou limites, ou aux autorités de tutelle des territoires considérés.  
 FIDA Carte compilée par le FIDA

- **Perimeters in the South-West**

In the south-west, in the Onilahy valley, there are also several large irrigated areas, some of which were developed and exploited for the benefit of the colonists. The social situation in the Taheza and Belamoty schemes is all the more complex because the land situation inherited from the colonial concessions has not been clearly resolved (Droy 1992: Taheza and Belamoty schemes). The rehabilitation of these perimeters has been more recent and is carried out within the framework of the *Projet de Réhabilitation des Infrastructures Agricoles de la Région du Sud-Ouest (PRIASO)*, which began in 2015 and concerns 3 irrigated perimeters in the south-west, 2 of which are located in the Atsimo-Andrefana region (Taheza and Manambo Ranozaza), the third being in the Bas Mangoky, towards Morombe. This \$49 million project was completed in 2020; it controlled and supervised the construction of new infrastructures and the rehabilitation of those in a poor state of repair.

---

## 2.2. Agriculture, livestock farming and fisheries

---

### Key resources on Agriculture, livestock and fisheries

---

- CRS, 2021: Firanga II Baseline Survey (Project evaluation tab)
  - Morlat Laetitia and Castellanet Christian, 2012: Intervening in a region "on the sidelines of development" (Report tab)
  - Raharison Tahina, Belieres Jean-François and Randriamiarana Rakotondramanana Volololoniraisana, 2018 : Impact study report on agroecological practices disseminated in the framework of agroecological blocks by the HOBA project (Project evaluation tab).
  - Dominique Violas, Fabrice Lhérieau, Tolotra H., Ranaivoharimanana, Rindra R., Sandratriniaina, Rakotondramanana, Jérémie Maharetse, Tahina Raharison, Alain Brauman, Julia Denier, 2020: Agroecology development strategy in the south of Madagascar. Feedback on agroecological blocks (Project evaluation tab)
  - Caroline Broudic, Tsiory Razafindrianilana, 2020: Adaptation aux changements climatiques des populations rurales du Sud-Ouest de Madagascar. Diagnostic et Perspectives, GEOECO Alternatives, February 2020 (Report tab)
- 

### 2.2.1 A shared observation: the need to overcome inherited agricultural practices

#### Severe agro-climatic constraints

All the studies of Madagascar's deep south point to an unfavourable agro-climatic context, with low rainfall, intense droughts and violent winds causing sandstorms that cover homes, crops and wells

(Amnesty International, 2021 ; RASOLOFONIAINA Jean Donné, 2021; Healy Timothy, 2017; Sambo Miadantsoa, 2016; Mialiarimanana Andonindraina Mandrindra, 2016; Ramaromisa Hantamalala Miora, 2020; Tadjidine Younoussa Abdou, 2018; Ahamada Abdou Said, 2016). These difficult climatic conditions, as well as the presence of army worms, weaken livelihoods in a region where household consumption and income depend almost exclusively on agricultural activity (CRS, 2021). Extensive farming practices are no longer sufficient to generate surpluses or ensure self-consumption by households.

### Some of the problems highlighted by the studies

The studies highlight the following facts in particular:

- The inheritance system leads to the fragmentation of agricultural plots, which, over the generations, are no longer sufficient to cover household needs (Frederic Sandron, 2008);
- Very low agricultural productivity, according to some because of difficulties in supplying fertilisers and plant protection products, for others because of poor water management, or because of a lack of biological pest control (Morris Michael and David-Benz Hélène, 2011; MRC and INSTAT, 2016; World Bank, 2011; BNGRC, 2015);
- Very little use is made of intercropping, "improved" fallow, compost (which only becomes attractive if the crops are fixed) or manure (the fady of using zebu dung is sometimes invoked) - in short, of agroecological techniques (cf. below) (Carimentrand Aurélie, 2010; Lheriteau Fabrice and Violas Dominique, 2015; FAO, 2020; Raharison Tahina, Belieres Jean-François and Randriamiaranarakotondramanana Vololoniraisana, 2018).

### Weak food coverage

According to a study carried out by the CRS, supported by USAID and the BHA, in 6 districts of southern Madagascar, the coverage period for food from production is only 1.9 months on average. Access to food is also difficult, with households receiving an average of 5.6 months' "adequate food supply". The hunger gap is getting longer and food insecurity is increasing (CRS, 2021; Razanaka, S. et al., 2001).

Tableau 75 : Proportion des ménages selon le nombre de mois couvert par l'autoproduction en aliment de base

Table 6.

Désagrégation	0-3 mois	4-6 mois	7-9 mois	10-12 mois	N
<b>District</b>					
Ampanihy	91,7%	6,8%	0,3%	1,3%	397
Beloha	88,3%	9,3%	0,5%	2,0%	400
Tsihombe	82,1%	15,1%	1,0%	1,7%	403
<b>Genre du chef de ménage</b>					
Femme	89,3%	8,8%	0,5%	1,4%	578
Homme	85,5%	11,9%	0,6%	1,9%	622
<b>Statut du chef de ménage</b>					
Adolescent	85,2%	11,1%	0,0%	3,7%	27
Femme adulte	89,4%	8,6%	0,5%	1,4%	556
Femme et homme adulte	85,9%	11,8%	0,7%	1,6%	610
Homme adulte	57,1%	28,6%	0,0%	14,3%	7
<b>Ensemble</b>	<b>87,3%</b>	<b>10,4%</b>	<b>0,6%</b>	<b>1,7%</b>	<b>1200</b>

Source: CRS, 2021

**Table 7.** Proportion des ménages selon le nombre de mois d'approvisionnement alimentaire adéquat

Désagrégation	0-3 mois	4-6 mois	7-9 mois	11-12 mois	N
<b>District</b>					
Ampanihy	33,8%	35,0%	25,2%	6,0%	397
Beloha	29,3%	32,5%	28,3%	10,0%	400
Tsihombe	23,8%	30,3%	31,0%	14,9%	403
<b>Genre du chef de ménage</b>					
Femme	31,7%	31,5%	26,6%	10,2%	578
Homme	26,4%	33,6%	29,6%	10,5%	622
<b>Statut du chef de ménage</b>					
Adolescent	25,9%	33,3%	25,9%	14,8%	27
Femme adulte	32,0%	31,3%	26,4%	10,3%	556
Femme et homme adulte	26,2%	33,8%	30,0%	10,0%	610
Homme adulte	28,6%	28,6%	14,3%	28,6%	7
<b>Ensemble</b>	<b>28,9%</b>	<b>32,6%</b>	<b>28,2%</b>	<b>10,3%</b>	<b>1200</b>

Source: CRS, 2021

### The fragility of livestock farming

Livestock farming is the second most widespread activity in the region. It serves a variety of purposes, ranging from resilience strategies for poultry farming to customary and symbolic rationales for zebu farming (Hanke Hendrik and Barkman Jan, 2017; Neudert Regina, Goetter Johanna, Andriamparan Jessica and Rakotoarisoa Miandrano, 2015). In recent years, the lengthening of the hunger gap has led to a sharp decapitalisation of livestock products (Hanke Hendrik and Barkman Jan, 2017; Holazae, 2016; Bahya-Batinda Dang et al., 2018). What is more, the persistence of extreme weather conditions for three consecutive years has prevented households from rebuilding their herds. In addition, the insecurity linked to the dahalo phenomenon is weighing on the logic of accumulation (Fauroux Emmanuel, 1987; Kaufmann Jeffrey C. and Tsihamba Sylvestre Tsihamba, 2006).

### Market instabilities

The fact that the region is landlocked exacerbates the difficulties associated with household livelihoods. A poorly integrated market exposes the population to local supply and demand shocks. When production is low, few households generate a surplus that can be sold on the market. With quantities low and demand high, the price of agricultural products soars. Sudden decapitalisation of livestock products to cope with the shock contributes to a fall in the value of these products (Dostie Benoit et al., 2002; Harouna Ibrahima and Rakotonirainy Maherisoa, 2016).

### In conclusion: the vicious circle of extensive practices

The intensification of extreme climatic phenomena, in particular the three consecutive years of intense drought between 2019 and 2021, has once again highlighted the unsustainability of inherited practices. These extensive practices are caught in a vicious circle, in which increased hardship leads to the expansion of shifting agriculture, which in turn increases hardship.

## 2.2.2. But agricultural development approaches are still not very transformative

The situation is currently described by various stakeholders as alarming ([Amnesty International, 2021](#)). Many projects and programmes are looking for ways to increase the population's resilience. However, the difficulties persist and are becoming more acute. The actions that have been put in place do not break the vicious circle that has been set in motion, insofar as they do not aim to bring about systemic change.

### **Inadequate timeframes**

The sustainability of projects is not guaranteed. On the one hand, three to five years of a project is not enough time to radically change an inherited system. Secondly, the conditions under which the project is implemented can change once the project is over, as can social cohesion, compromising the persistence of the effects ([Patetsos Emmanuelle, 2009](#); [Thouillot Floriane and Maharetse Jérémie, 2010](#)). The actions implemented as part of a project must then be taken over by the local population or authorities. Without long-term monitoring, it becomes difficult to ensure ongoing adaptations, and therefore to sustain the actions undertaken.

### **Poor coordination**

The lack of cooperation between assistance mechanisms and development mechanisms can hamper the expected medium- to long-term effects, because of a lack of clarity between stakeholders for local populations ([Morlat Laetitia and Castellanet Christian, 2012](#)). The simultaneous existence of free mechanisms and market mechanisms by actors who are indistinguishable in the eyes of local populations leads to a lack of understanding of the interests pursued by each type of actor. Development initiatives based on market mechanisms have difficulty sustaining themselves.

Furthermore, external intervention is no substitute for State intervention in major water, consumer, livestock and agricultural infrastructure projects, as well as road infrastructure to open up the region and enable it to integrate the southern market ([Plan émergence Sud Madagascar \(République malgache\), 2021](#)).

### **Questionable technical choices**

Many projects focus their support on strengthening cash crops. These efforts may be to the detriment of agriculture that is more sensitive to nutrition. Insofar as women tend to specialise in self-consumption crops, these efforts may benefit men and women unequally. Moreover, many technical choices are made with reference to the Green Revolution model, based in particular on the regular provision of external inputs and on water management ([Morris Michael and David-Benz Héliène, 2011](#); [Thouillot Floriane and Maharetse Jérémie, 2010](#)). The water shortage in the Grand Sud remains a major constraint on farming. The impact of projects to improve access to agricultural equipment and seeds remains dependent on the availability of water for farming ([Fare Yohann, 2019](#)). A great deal of effort has been put into water management, but access to this resource remains extremely complex, whether for agricultural, domestic or livestock use (see the water section).



## 2.2.3 Yet there are viable avenues for a systemic transformation of agricultural practices

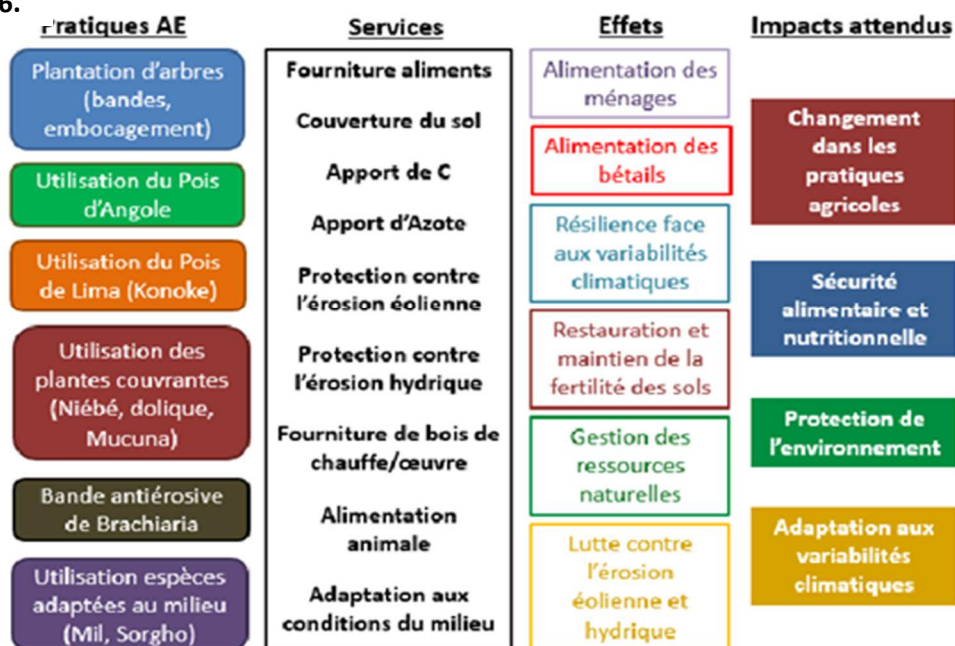
In the light of past failures, the solution for the Deep South does not appear to lie in the partial and ad hoc provision of a technical package inspired by the Green Revolution, or in the accumulation of short, poorly coordinated projects insufficiently based on a socio-anthropological approach. Rather, it seems to be based on a systemic vision, founded on the principles of agro-ecology.

### The tried and tested route of agroecology

Between, on the one hand, an inherited form of agriculture trapped by tightening constraints and, on the other, an agro-industrial approach which, where it is established, tends to greatly increase the pressure on resources by "industrialising" the extensive dynamic, the only viable path seems to be that of agro-ecological intensification (Broudic Caroline and Razafindrianilana Tsiory, 2020). Agroecology integrates agroclimatic difficulties more than it seeks to combat them. The promotion of adapted species and seeds, soil improvement with cover crops or even pigeon pea hedges reduce the probability of crop failure due to lack of rain, for example. Finally, agro-ecology means that we can no longer just target plots of land or households, but also territories, in a systemic vision.

Figure 1 : Pratiques agro-écologiques, services écosystémiques, effets et impacts attendus

Figure 6.



Source: Raharison T. et al., 2018

### Transforming crop choices

Seed supply during rainy spells is difficult in the Grand Sud, and access to water remains particularly limited. To deal with these difficulties, agroecology is promoting multi-annual crops such as konoke or pigeon peas, which are more resistant to water stress (Miadantsoa, 2016).

Shifting dunes, wind erosion and predator attacks can also cause crops to be destroyed. Agroecology makes it possible to design a set of crops and soil cover that limit erosion and the harmful effects that

can result from it. These crops can be used as firewood and livestock feed (Raharison Tahina, Belieres Jean-François and Randriamiarana Rakotondramanana Vololoniraisana, 2018).

The HOBA project implemented by GRET and CTAS has established an increase in agricultural production of between 100 and 300kg per hectare through the adoption of agroecological practices. What's more, the new species introduced mean that food availability is better distributed throughout the year, particularly during the lean season. (Raharison Tahina, Belieres Jean-François and Randriamiarana Rakotondramanana Vololoniraisana, 2018)

The introduction of new species also takes into account the nutritional content of cereals and pulses, offering new sources of nutrients in a region where food insecurity remains the most pressing issue.

Finally, agro-ecological intensification enables plots of land to be developed and crops to be fixed. This makes it possible to enrich the soil.

### **Prospects for scaling up**

While a radical change to the inherited system requires long-term monitoring, the urgency of the situation means that we need to think about the rapid scaling-up of projects. It therefore seems important to consider the rapid scaling up of the agroecological block approach, with socio-anthropological support (Dominique Violas, Fabrice Lhérique, Tolotra H., Ranaivoharimanana, Rindra R., Sandratriniaina, Rakotondramanana, Jérémie Maharetse, Tahina Raharison, Alain Brauman, Julia Denier, 2020), but also by linking agroecology and female empowerment (see point 3.3.).

### **The conditions for distribution**

Some of the conditions for disseminating agroecology are addressed in the texts consulted.

- A focus is needed on the link between agriculture and livestock farming (two technical systems practised/studied separately) (Hanke Hendrik and Barkmann Jan, 2017; A2DM/CONFORME, 2018). The role of oxen in capitalization, identity, social and power structures should not be overlooked (Saint Sauveur, A., 1996, 2007);

- The question of the social acceptability of agroecology and the conditions for its widespread and sustainable dissemination is a necessary one. It can be addressed within the framework of the Makis project;

- In addition to external players (GRET, Agrisud, AVSF), we also need to draw on national action-research networks on agroecology, such as GSDM (2016, Manuel de Formation à l'agroécologie), and university courses (Master's degree in Agroecology, Biodiversity and Climate Change at the University of Antananarivo). It is important to mobilise and support these local resources (Dominique Violas, Fabrice Lhérique, Tolotra H., Ranaivoharimanana, Rindra R., Sandratriniaina, Rakotondramanana, Jérémie Maharetse, Tahina Raharison, Alain Brauman, Julia Denier; 2020);

- The FAO's "Resilience Fund" approach seems perfectly compatible with agroecology. The FAO mentions this approach in its 2016 "Risk Analysis and Resilience Plan", but we have no information on the actual implementation (or not) of the approach.

Agroecology's ambition to transform requires a long-term approach, with socio-anthropological input to enable step-by-step progress and ongoing adaptation.



## Key facts about agriculture, livestock and fisheries

### Key findings

- 1/ Inherited practices are no longer sufficient to ensure food security and maintain living standards
  - Shared observations: an unfavourable agroclimatic context, longer wetting periods, livestock farming activities compromised by successive decapitalisations, poor market integration.
  - There is the usual vicious circle of extensive farming practices, which together increase the degradation of agro-ecosystems and the difficulties faced by farmers.
- 2/ The projects do not generally allow for a systemic transformation of agricultural practices.
  - Projects of too short a duration, with little co-ordination, which do not guarantee that the new practices will be adopted or that the effects observed will be sustainable.
  - The backdrop to this is a persistent attachment to the old concept of agricultural 'modernisation', based on the use of external inputs, water management through technical improvements, and so on.
- 3/ Agro-ecology appears to be a viable, but demanding, route to systemic transformation
  - The agro-ecological experiments being carried out in southern Madagascar appear to be helping to improve people's resilience, by breaking the vicious circle described above. They are also adapted to take better account of gender issues. And finally, they highlight technical solutions that enable local autonomy, by limiting dependence on expensive imported equipment and inputs.
  - But the dissemination of these practices is demanding: they must be adapted to the type of agro-ecosystem, be accompanied by a socio-anthropological approach (acceptability of innovations, taboos), and take place over long periods, going beyond the usual timeframe of projects.

### A few recommendations

- It would seem appropriate to attempt to establish a shared vision of "agricultural progress" between the various donors and operators involved in agricultural development, both national and TFP. Establishing a consensus around a vision based on agroecology would be a first step towards transforming farming systems in the South.
- In view of the urgency of the situation in the South, and the time needed to implement a transformative approach, it would seem necessary to initiate this process as quickly as possible. It would be wise to mobilise national resources (research-action) in the field of agroecology.
- A long-term monitoring and evaluation system should be envisaged, based on agrarian diagnoses and involving agronomists and geographers on the one hand, and social scientists on the other. Among the latter, socio-anthropologists seem to have a major role to play in understanding and supporting the societal transformations associated with the spread of these technical practices. This could involve European funding for DeSIRA (*Development Smart Innovation through Research in Agriculture*).
- Finally, the large-scale promotion of agro-ecology must not blind us to the need to take account of the integration of agricultural and livestock activities (broad systems approach), and to link this promotion with activities to empower women.

## 2.3 Environment and climate change

---

### Key resources on the environment and climate change

---

- Ministère de l'Environnement et du Développement Durable, 2019 Plan National d'Adaptation au Changement Climatique (PNA) Madagascar
  - François Enten (2022) L'IPC à l'épreuve du kéré : The peregrinations of a model traveller in Madagascan country
  - Ranaivoson (2018) Challenges, issues and policies: migration, environment and climate change in Madagascar
- 

### 2.3.1 Restrictive agro-climatic conditions: a challenge for development

In order to gain a precise understanding of the issues surrounding the environment and climate change in the far south, we feel it is essential to detail the specific agro-climatic features of the three regions studied: Atsimo Andrefana, Anosy and Androy.

#### Climate and hydrology

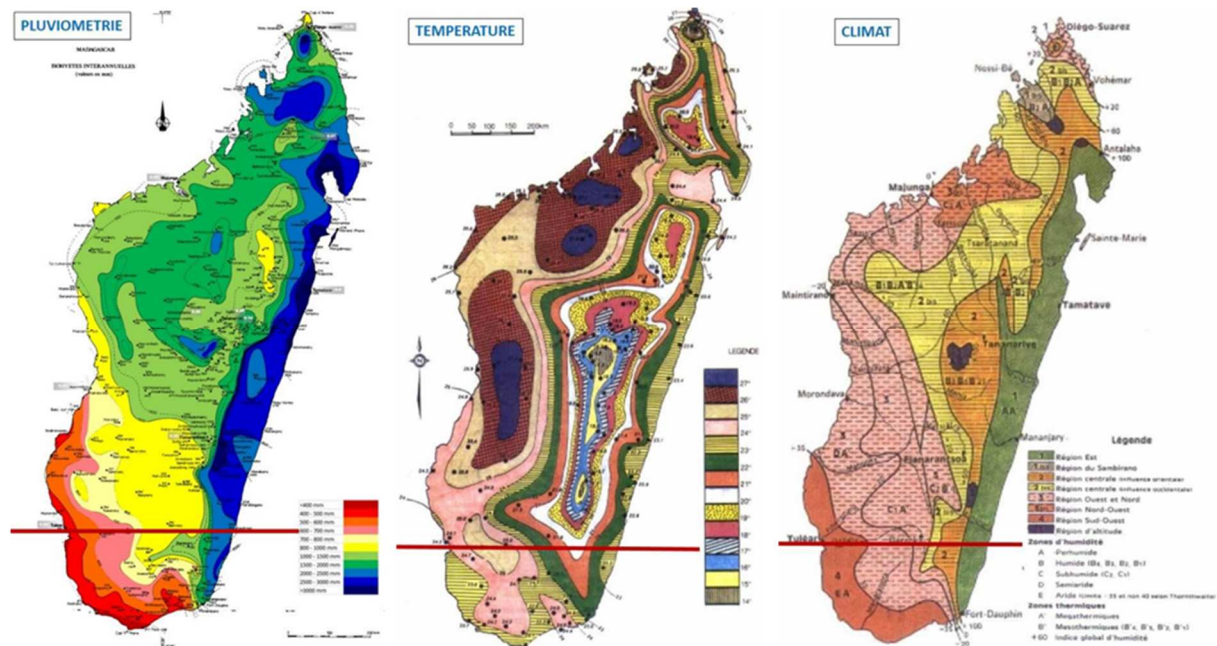
The **Atsimo Andrefana Region** is distinguished from the other regions of Madagascar by its semi-arid climate. It is one of the Sahelian regions and is made up of plateaux and plains. From October to April, temperatures are high, reaching 40°C in January. From May to September, temperatures are milder, dipping below 10°C in June and July. The region has two seasons: the dry season, which lasts 7 to 9 months, and the rainy season, which is sometimes unpredictable, often highly irregular and always with less than 600 mm of rainfall a year. The region is crossed by two categories of watercourse. On the one hand, there are rivers with a catchment area of more than 400 kilometres, and on the other, rivers on sedimentary terrain of no more than 300 kilometres (RAMAHANDRY Hajarivelo, 2019).

The **Androy region** has a semi-arid to arid tropical climate, with a wet season in summer and a dry season in winter. The aridity intensifies from the north and north-east to the south and south-west of the region, and is reflected in the changing landscape. Strong, persistent, drying winds and particularly high temperatures reinforce the aridity of the region, especially on the southern coast. Although the Androy also experiences hot spells (January and February), the temperature range remains low, hovering around 24°C. Androy stands out from the other regions for its hydrological characteristics. Although the region is drained by three major rivers (Menarandra, Manambovo and Mandrare), none of them is perennial and they are reduced to surface run-off, particularly during the dry season (RAMAHANDRY Hajarivelo, 2019).

In the **Anosy region**, the temperature varies considerably between the north and south of the region. In the south-east, on the coast, the temperature is 28°C in February and drops to 17°C in July, while in the north, on the Ihorombe plateau, temperatures are 20°C and 10°C respectively. Unlike the Androy, rainfall in this region is almost continuous. It is abundant in December and January and lasts until July and August, with average rainfall of around 100 mm. Only September and October can be considered

dry. The region's hydrography is divided into two: the Mandrare complex and the rivers of the east coast (RAMAHANDRY Hajarivelo, 2019).

**Figure 7. Madagascar's climatic characteristics**



Source: RASOLOFONIAINA Jean Donné, 2021

### Specific climatic conditions

The vast majority of studies carried out in Madagascar's deep south, particularly in the Androy, point to agro-climatic constraints. In addition to the scarcity of rain and the intensity of droughts, other phenomena are particularly restrictive.

The wind season, which is particularly active on the Androy coast, generates violent winds that erode the soil. They can even amplify existing dune shifts and silt up agricultural plots, homes and hydrological infrastructures (VIOLAS Dominique, MAHARETSE Jérémie, SANDRATRINIAINA Rindra R. and LHERITEAU Fabrice, 2018).

In addition, the regions of the Grand Sud are facing an intensification of locust invasions and army worms. In these regions, where agricultural activities are prevalent, these phenomena are devastating, particularly when combined with extreme climatic events (CRS, 2021).

Finally, the deep south is also prone to powerful cyclones. In February 2013, tropical cyclone Haruna entered the south-west coast of Madagascar, in the Morombe district, and exited via the extreme south-east after crossing the whole of southern Madagascar. This category 2 cyclone brought heavy rain and strong winds (Cluster Sécurité Alimentaire Moyens de Subsistance (SAMS), 2013).

### Will climate change make things worse?

A great deal of research has been carried out into the historical development of droughts in the south of Madagascar. Generally speaking, we can see that climatic phenomena (drought, violent winds, cyclones) are multiplying and worsening.

The Androy region is particularly prone to these climatic episodes. Periods of drought are accompanied by longer lean periods, food shortages and famine (kéré). Box XX provides a historical analysis of kéré periods since the 1930s. There has been a marked increase in this phenomenon since the 1980s.

### **History of kéré in Androy since 1928**

- 1928: The combined effect of low rainfall and a livestock crisis following the destruction of the "raketa" (a cactus eaten by animals and used as a substitute food in times of shortage) by a scale insect imported from Réunion. This episode led to large-scale emigration.
- 1930-1931: Severe drought leading to population displacement.
- 1941-1944: The great "Maro taola" famine (literally "many human bones") led to the migration of almost all the Antandroy people from the sedimentary zone.
- 1956: Drought.
- 1980: Drought known as "Santira vy" ("Iron Belt").
- 1982: "Malalak'akanjo" drought ("we are wide in our clothes").
- 1986: "Bekalapake" drought ("dried manioc cut into pieces").
- 1989 -1990: Famine and drought, much decapitalization, major migration "tsy mitolike" "we eat without looking back" to describe the individual struggle for survival.
- 1991-1992: Food shortages turned into famine "Tiomena": "The red wind"; major migrations.
- 2000-2004: a crisis linked to a series of bad climatic years, as a result of which the crops were almost entirely destroyed and the "well-off" households who sold the most zebus.
- 2009-2012: "Arikatoke" famine, ("everyone is affected by the 'kere', including the rich, the middle classes and especially the poor")
- 2014-2015: "Taviovio" famine ("like a drunk person")
- 2016: great famine: unnamed because his name appeared after his death.

Source: [SAMBO Miadantsoa, 2016](#)

Faced with increasing periods of drought, many players are taking action. In 2019, the government is adopting a national plan for adaptation to climate change ([Ministère de l'environnement et du développement durable \(MEDD\), 2019](#)). The aim of this plan is to strengthen the ability of populations and economic sectors to adapt to the consequences of climate change. In 2021, the United Nations is alerting public opinion to what could be one of the "first famines in the world due to climate change". At the same time, Amnesty International has published a report outlining the urgency of the situation

in the south of Madagascar. The organisation is calling for international solidarity in view of the direct effect of global climate change on the regions of Madagascar's deep south.

However, some authors qualify the existing link between climate change and famine in southern Madagascar. According to the World Weather Attribution (a network of researchers analysing the consequences of climate change), the link between climate change and the recent famine in southern Madagascar cannot be clearly identified. The authors of the report put forward other factors that could explain the food crisis in the southern part of Madagascar. They point to exceptional droughts, the impact of the COVID-19 crisis and, more generally, the chronic poverty characteristic of southern Madagascar.

Despite this nuance, there is no longer any doubt about the fact that droughts and, consequently, *kéré* are intensifying. With this in mind, it is important to devise mechanisms to improve the ability of the populations of southern Madagascar to adapt. Several mechanisms can be developed to stem the link between climatic hazards, chronic poverty and malnutrition (see thematic section: nutrition).

### 2.3.2 Migration and deforestation: the vicious circle of environmental degradation

#### Migration and land issues

Whether migration is motivated by a deterioration in living conditions in the area of departure or by economic opportunities in the area of arrival, it can be closely linked to environmental degradation.

Migratory movements in the southern part of Madagascar over the last twenty years are above all the result of the global and structural crisis of the socio-spatial system. The migratory movements and the reduction in rainfall occurred simultaneously in the early 1990s. At that time, some studies highlighted the fact that climate change and the succession of droughts would amplify migratory phenomena (CANAVESIO Remy, 2015).

In a region where agriculture is the main income-generating activity, these migratory movements put a strain on natural resources and contribute to episodes of deforestation.

"Among the Bara, as among the Sakalava (Fauroux, 1996), the creation of nature is the result of divine interventions, of multiple origins, by entities grouped together under the generic term of *Zañahary*. These divine interventions have given nature its sacred character and have made it the preferred abode of spirits in many places, which can be identified by geographical features (caves, springs, dense forests), creatures or animals that people respect and pray to because they are the intermediaries of 'divine beings' on earth" (MOIZO Bernard, 1997).

The forest was little used at the time, although it was considered an unlimited reservoir of resources. The link between man and the forest was established through ceremonies, rituals and the observance of certain taboos. Exploitation of the forest was limited to the collection of dead wood for firewood, gathering and its function as a zebu park.

The colonial period marked an important turning point in the management of natural resources. In this context, compulsory taxation strongly encouraged the populations of the Highlands, the South East and the extreme South to migrate to Sakalava country. The migrants have marked a break with the

traditional exploitation of the forest, particularly because of the development of agriculture (FAUROUX Emmanuel, 2001). The pioneering cultivation of maize is the major cause of spectacular deforestation, which is accelerating over time (RAZANAKA Samuel, GROUZIS Michel, MILLEVILLE Pierre, MOIZO Bernard and AUBRY C., 2001). As for the bara, they have had to cope with colonial logging and the massive influx of migrants that accompanied it (MOIZO Bernard, 1997).

Added to this, increased tensions with migrants, sedentarisation and the growing difficulty of pastoral activity in a rapidly changing environment have undermined the preservation of natural resources through a set of shared beliefs and practices. The link with the forest is no longer supernatural; it has become economic and strategic (DESBUREAUX Sébastien and RICHARD Damania, 2018; MOIZO Bernard, 1997; RAZANAKA Samuel, GROUZIS Michel, MILLEVILLE Pierre, MOIZO Bernard and AUBRY C., 2001).

There is a need for genuine reflection on the issue of migrants, access to land and the use of land and resources. Greater harmony between modern law and customary law seems necessary, in particular through the potential use of zoning of the national territory according to local concepts of land tenure. The focus should not so much be on land tenure as on the use of resources, since it has been observed that this is what is really at stake, and not access to land itself (RAZANAKA Samuel, GROUZIS Michel, MILLEVILLE Pierre, MOIZO Bernard and AUBRY C., 2001).

## **Deforestation**

Forest degradation is directly linked to the expansion of human activities. In Bara country, the link between the local population and forest resource management has changed profoundly, with the transition from collective, reasoned management of natural resources to individualistic, intensive management of these resources (MOIZO Bernard, 2003).

However, deforestation also remains largely a strategy adopted by farmers in response to the negative impacts caused by drought. Nationwide, drought increases deforestation by 7.6% compared with normal years. The impact is even greater in the dry western and semi-arid southern regions, rising to 17%. The effect of drought on deforestation is three times higher for forests close to communities than for isolated forests (DESBUREAUX Sébastien and RICHARD Damania, 2018).

In addition, the traditional farming practices of the Tandroy population are not compatible with sustainable forest management, particularly as a result of slash-and-burn agriculture and the burning of cactus for livestock fodder. The work of ??? seeks to understand how the use of the Androy's natural resources can be sustainable. In their view, if the Tandroy want to maintain their standard of living, they need to stabilise the population and reduce net deforestation. If they want to increase their standard of living without changing their lifestyle, they must reduce their population. Finally, if they want to increase their standard of living without reducing their population, they will probably have to move away from their traditional production system (ANDRES-DOMENECH Pablo, SAINT-PIERRE Patrick, FANOKOA Pascaux S. and ZACCOUR Georges, 2014).

Faced with the scale of deforestation, a number of studies have highlighted ways of slowing or even curbing the phenomenon.

Among these, conservation policies appear to be effective in tackling the problem of deforestation. According to this observation, solutions for agriculture must be combined with conservation policies (MOIZO Bernard, 2003). If controlling the use of forests is too costly, public programmes should stimulate reforestation to compensate for the damage caused (ANDRES-DOMENECH Pablo, SAINT-PIERRE Patrick, FANOKOA Pascaux S. and ZACCOUR Georges, 2014). This conservation is all the more



important as it prevents run-off in a region with extremely low rainfall ([Centre de recherches, d'études et d'appui à l'analyse économique à Madagascar \(CREAM\), 2013](#)).

Another study has shown that deforestation has mainly taken place in areas where land tenure security is low. Clearing land is seen as a means of obtaining a formal right to it. In this sense, working to guarantee security of tenure for as many people as possible would help to reduce deforestation ([ELMQVIST Thomas, PYYKÖNEN Markku, TENGO Maria, RAKONTONDRA SOA Fanambinantsoa, RABAKONANDRIANINA Elisabeth and RADIMILAHY Chantal, 2007](#)).

Finally, the work of [BAYALA Jules, BOUREIMA Zakari, VAN DER HOEK Rein, LAMSELLEK Habiba, SOUROU NOUATIN Guy, RANDRIANARISOA Mina and TORQUEBIAU Emmanuel \(2003\)](#) on the Vineta plateau has shown that forest areas seem relatively less exposed to deforestation when the forest is useful to the population. Favouring certain tree varieties whose fruit has an economic value when reforesting could enable the local population to accept reforestation projects more readily and make these new forests sustainable.

#### 2.3.4. Mitigation strategies still inadequate

##### **Projects and programmes hampered by a lack of coordination**

The Madagascan government has adopted a National Climate Change Adaptation Plan for 2019. It is structured around three strategic areas: (i) strengthening governance and the integration of adaptation, (ii) implementing a priority sectoral action programme (iii) and finally financing adaptation to climate change. The Grand Sud region is explicitly mentioned in the Plan, with the ambition of strengthening the resilience of populations and their agricultural activities to climate change ([Ministère de l'environnement et du développement durable \(MEDD\), 2019](#)).

However, these projects still require coordination between emergency and development players, as well as between local, national and international organisations. Problems of coordination between the various players hamper the implementation of effective responses.

The aim of early warning mechanisms is to anticipate climatic, natural or health disasters. However, the lack of coordination between players and the complexity of the processes make the system ineffective. [François Enten \(2022\)](#), analysing the example of the Integrated Food Security Classification Framework (IPC) in southern Madagascar, shows the limitations of this type of early warning system in responding to food shocks. Problems of coordination between aid providers hamper the rapid implementation of effective responses. With this in mind, it seems important to develop mechanisms to integrate all the players involved in southern Madagascar.

##### **Lack of information and training**

To improve households' ability to adapt, effective information systems need to be developed. According to [BROUDIC and RAZAFINDRIANILANA](#), it is imperative to produce and communicate information on climate change. Without weather forecasts, the ability of local authorities and populations to adapt is largely hampered ([BROUDIC Caroline and RAZAFINDRIANILANA Tsiory, 2020](#)).

The example of disseminating meteorological and hydrological information by radio and e-mail as part of the PACARC project has shown the limitations of certain communication channels. If it is to be

effective, this communication must be based on local standards for disseminating information (FARE Yohann, 2019).

The need to produce information and communication on climate, weather and rainfall conditions is reiterated by the Malagasy Raitra Consulting study firm. Access to such information strengthens people's support for a change in practices that are more resilient to climate change (Cabinet d'étude Malagasy Raitra Consulting (MRC) and INSTAT, 2016). This need to communicate information to farmers and local populations is essential to promote adaptation strategies. The use of radio, and community radio in particular, can enable such dissemination.

It is also vital to devise methods for training technicians, decision-makers and communities to collect and disseminate meteorological and hydraulic information and to transfer practices that are resilient in the face of climate change (FARE Yohann, 2019). More generally, initial and continuing training, aimed specifically at adults, can help to strengthen people's ability to adapt, to understand climate change and to adapt to it.

### 2.3.5. Possible adaptations to climate change

#### **Early warning system enhanced by remote sensing**

Early warning systems can be particularly effective and are essential for risk management in regions as vulnerable as the Grand Sud. As we said earlier (see 2.3.4), the players involved in early warning systems need to step up their coordination efforts to increase the speed of their response, and the systems themselves need to be better adapted to local specificities and take account of warning signals that are absent from the generic warning system (ENTEN François, 2022).

In this sense, satellite data and remote sensing tools can help to enrich these warning systems and are a powerful tool for detecting early signs of drought. In Madagascar, land clearing and changes in the use of forest resources can provide early warning of both the vulnerability of households and the state of natural forest resources (DESBUREAUX Sébastien and RICHARD Damania, 2018).

#### **Adaptive social protection**

The introduction of adaptive social protection mechanisms is a solution being developed in the Sahel region in response to the increased vulnerability associated with climate change. This project, supported by the World Bank and the *Department for International Development*, aims to develop an adaptive social protection programme in six Sahelian countries: Burkina Faso, Chad, Mali, Mauritania, Niger and Senegal. In practice, this programme strengthens access to cash transfers for those most vulnerable to the consequences of climate change (World Bank, 2017). Developing this type of programme in southern Madagascar could be a suitable solution.

However, a number of difficulties are central to the success of this type of programme in the region. Firstly, how do you target the people who should actually benefit from financial support? In the context of southern Madagascar, which is characterised by chronic poverty, targeting beneficiaries is particularly complicated.

Secondly, how can the sustainability of social protection mechanisms be guaranteed in the long term? As we have identified in this section, the rate of climatic disasters is tending to increase, so the implementation of these programmes needs to be thought through over the long term. From this point



of view, the financing of cash transfer programmes seems to be a major obstacle to the implementation of sustainable cash transfers. Other solutions can be identified in the development of social protection mechanisms. However, these other programmes must also meet the two challenges/difficulties we have just highlighted.

With this in mind, it is important to think about mechanisms for strengthening local collectives and organisations to manage climate risks. As [RAMAROSON \(2017\)](#) points out in the strategic programme for resilience to climate change, it is important to strengthen protection mechanisms at community level. In order to fully achieve the protection objectives, it is also important to devise mechanisms that enable the most vulnerable sections of the population to be included.

In the development of these different programmes, the coordination of development and emergency players is a key condition for the success of these interventions. Another important condition is accurate knowledge of the vulnerabilities of local populations. Interventions in the field of social protection must therefore be based on approaches that enable data to be collected, analysed and disseminated.

### **Agroecology**

Agroecology has the dual advantage of offering agricultural alternatives that are resilient in the face of drought and climate change, and of mitigating the effects of climate change and agro-climatic phenomena. Agro-ecological blocks have been tested in the Androy region, helping to stabilise dunes and reduce soil erosion. (see point 2.2. thematic section: Agriculture).

### **Key facts about the environment and climate change**

#### **Key findings**

- 1/ The intensification of droughts is having a major impact on household vulnerability.
- 2/ Migration processes as a solution to and reinforcement of the consequences of climate change.
- 3/ The lack of coordination between aid agencies means that we cannot respond sustainably to the consequences of climate change.
- 4/ Weak information systems limit households' ability to adapt.

#### **A few recommendations**

- Setting up early warning and surveillance systems in collaboration with the various levels of stakeholders (local, regional, national and international).
- Setting up meteorological services to alert local authorities and rural households.
- Setting up remote sensing mechanisms to accurately monitor vegetation cover and deforestation.
- Integrating migration into development projects.
- Support for agro-ecological methods to strengthen the adaptation and resilience of agriculture in the face of climate change.

## 2.4. Food and nutritional security

---

### Key resources on food and nutrition security

---

*ACAPS 2022: MADAGASCAR Food insecurity crisis in the Grand Sud regions*

*MORLAT Laetitia and CASTELLANET Christian, 2012: Une région à l'écart du développement, which takes stock of emergency/development issues*

*ONN, 2021 : Interim evaluation of the National Action Plan for Nutrition 2017 - 2021 PNAN III*

*Ralaingita 2022: the Kere of Madagascar: a qualitative exploration of community experiences and perspectives (tab article)*

*Hänke, H. et al. (2017) 'Social-ecological traps hinder rural development in southwestern Madagascar', Ecology and Society, 22(1). Available at: <https://www.jstor.org/stable/26270090>*

---

### 2.4.1. Repeated food crises: an admission of development failure

In his reference work *Poverty and Famines* (Sen, 1981) showed that famines are not only due to insufficient availability of foodstuffs, but also to poverty and malfunctions in the food distribution system<sup>5</sup>. From this perspective, the recurrence of food crises in southern Madagascar underlines the fact that the fundamentals of development are not in place and do not allow the population, which is largely dependent on agricultural production, to guarantee its right of access to food.

---

<sup>5</sup> The approach developed by Sen is based on the concept of *entitlements*. It is a microeconomic approach, but one that leaves plenty of room for the social and institutional environment in the organisation of rights of access to food (*food entitlements*). Individuals use their endowments, whether tangible (land, monetary resources, physical and financial capital, etc.) or intangible (skills, social capital, etc.), to access different possible combinations of goods and services (*commodities*). All the combinations of goods and services to which the individual has access on the basis of his resources form his access rights (*entitlements*). Sen then defines *entitlement mapping*, which establishes the relationship between an individual's endowments and their access rights. The process of converting endowments into rights of access to goods and services takes place in three ways: (i) production (exchange with nature); (ii) exchange (wages or sale of assets to acquire food on the market); (iii) transfers or inheritance. Thus, for a given person, insufficient access to food can be linked to insufficient production possibilities (e.g. insufficient land area, insufficient access to water and irrigation), insufficient income or insufficient transfers received. An individual's endowments and the process of conversion are socially and economically determined by a set of key elements at the heart of the development process, which act directly or indirectly on rights of access to food. These include land distribution and tenure systems, wage and income levels, the quality of road infrastructure, the profit margins of collectors and distributors, and the quality and price of water distribution and irrigation services.

## A global and historical problem

Food insecurity is one of the main difficulties in the deep south of Madagascar. According to the WFP/WHO Special Report 2018, 74% of households are acutely or moderately food insecure, and the dietary diversity indicator is average. Acute malnutrition or wasting is highly fluctuating, periodic and particularly high during the lean season (between October and April), leading to situations of "kéré" or acute food insecurity (PNAN III, 2021). From the 1980s onwards, episodes of Kéré (literally famine in Antandroy) multiplied. Table 3 provides a good illustration of this dynamic, showing a clear difference in the frequency of the phenomenon before and after the 1980s. Ralaingita et al (2022) trace the genesis of the problem back to the 1920s, following the introduction of cochineal beetles, which contributed to the destruction of part of the plant cover. This destruction contributed to an increase in wind speeds, soil erosion and a drop in rainfall.

**Table 8. Census of Kéré episodes in southern Madagascar**

The Kere Storyline							
Number	Kere Name	Year of Occurrence		Scope	Notes	Duration	Range
		From	To				
1	<i>Marotaolagne</i> or <i>Tsimivositse</i> (Uncircumcised)	1930	1934	Deep South	Approx. ½ million dead; Trigger: Death of Cactus Forest; (Decary 1947)	4	9
2	<i>Marotaolagne</i>	1943	1946	Deep South	Approx. 1 million dead; Trigger: El Niño, Vichy war (Fenies 1957)	3	9
3	<i>Beantane</i> (Many-downed)	1955	1958	Deep South	No detailed record found	3	12
4	<i>Menaleogne</i> (Red-pounder)	1970	1972	Deep South	Engendered proclamation of Androy secession; Trigger: El Niño	2	8
5	<i>Santira-Vy</i> (Iron-belt)	1980	1982	Deep South	No detailed record found	2	0
6	<i>Malalak'akanjo</i> (Loose-shirt)	1982	1983	Deep South	No detailed record found	1	3
7	<i>Bekalapake</i> (Dried-cassavas)	1986	1987	Deep South	No detailed record found	1	1
8	<i>Tsimitolike</i> (Don't turn)	1988	1989	Deep South	No detailed record found	1	3
9	SOS Sud	1992	1994	Deep South	Trigger: Political Crisis; El Niño	2	1
10	<i>Arikatoke</i> (Surrounded)	1995	1996	Manambovo	No detailed record found	1	1
11	<i>Baramino</i> (Digging-bar)	1997	1998	Bekily, Beloha	No detailed record found	1	6
12	No name assigned	2004	2005	Deep South	Trigger: Political Crisis; El Niño; Insecurity	1	4
13	<i>Tiomena</i> (Red dusty wind)	2009	2013	Androy, Ampanihy	Trigger: Political Crisis, Insecurity, El Niño	4	1
14	<i>Taviovio</i> (Wobbly-walking)	2014	2017	Tsihombe, Anjapaly, Ampinihy	Unkown Death; Trigger: El Niño, Insecurity	3	3
15	No name assigned	2020	2021	Deep South	Trigger: El Niño, Insecurity, Covid 19	1	0
Total						30	61
Mean						2	4.067

Source: Ralaingita, 2022

In addition, there are a number of factors that increase household food insecurity. These include agro-climatic conditions that are unfavourable to agriculture (drought, El Nino locust phenomenon, soil impoverishment, salinisation of the soil) (Bidou et al, 2007) and the area's isolation, reinforced by the dilapidated state of the road infrastructure.

These various factors increase the proportion of food imports (Canevasio, 2015). Households are therefore vulnerable to variations in food prices (Bidou et al 2007), which considerably limits their access to nutritional resources.

## Alarming health consequences

Food insecurity has a direct and damaging long-term impact on the health of the population, particularly children. In the south of Madagascar, households mainly consume manioc, sweet potatoes

and maize. These foods do not meet all the nutritional requirements for children's good health. [Bahya-Batinda et al, \(2018\)](#) thus highlight the need for populations to have access to micronutrient-rich foods, in particular by guaranteeing the necessary iron intakes.

This problem is particularly alarming in young children, who adopt the adult diet around the age of twelve months. Deficiencies linked to the absence of certain nutritional intakes can then represent a serious problem for children's growth ([GARBA Issa Mahamat, 2017](#)). With this in mind, in addition to improving families' access to basic nutrients, it is also important to improve families' knowledge of how to detect forms of malnutrition and the consequences of nutritional deficiencies. Efforts have been made in this direction, but differences in perception between health workers and those around the child persist ([Rakotomalala, 2015](#); [MRC, 2016](#); [GRET, 2015](#)).

However, in terms of dietary diversity, the situation is less alarming in the Androy than in other regions of Madagascar. As Table 4 shows, chronic malnutrition (stunted growth) is higher in the Hautes Terres due to a lack of dietary diversity, particularly among young children (whose diet is essentially based on rice). In the Androy, the diet is more diversified, and legumes are valued. In this region, the problem lies more in the length of the hunger gap and the recurrence of droughts, which has an impact on acute malnutrition (emaciation).

**Table 9. Regional data on stunting, obesity and wasting**

	Retard de croissance (ODD 2.2.1)	Insuffisance pondérale	Surpoids: (ODD 2.2.2)	Emaciation	
	% retard de croissance (modéré et sévère)	% insuffisance pondérale (modéré et sévère)	% obésité (modéré et sévère)	% émaciés (modéré et sévère)	% émaciés (sévére)
National	42	26	1	6	1
Vakinankaratra	60	40	1	6	1
Amoron'i Mania	55	35	2	6	0
Haute Matsiatra	54	26	1	5	1
Bongolava	52	31	3	7	1
Analamanga	48	26	3	5	1
Alaotra Mangoro	47	28	2	6	1
Atsinanana	46	26	2	5	1
Itasy	45	28	1	6	1
Vatovavy Fitovinany	44	35	1	13	2
Androy	39	24	0	7	1
Sava	39	21	0	5	1
Atsimo Andrefana	38	26	1	6	1
Anosy	38	25	1	8	1
Boeny	34	29	1	9	1
Menabe	34	24	1	11	2
Betsiboka	34	29	0	11	1
Analanjirifo	31	20	2	7	2
Ihorombe	31	16	2	7	1
Diana	30	18	3	5	1
Sofia	29	20	1	5	1
Melaky	26	19	2	6	2
Atsimo Atsinanana	20	15	2	3	1

Source: INSTAT, MICS-2018 (2019: 66)

## Household practices for coping with food crises undermine future opportunities

When agricultural production is severely reduced as a result of Kéré, food access rights are based on market strategies (using income, migrating to work in a more favourable area or selling possessions to buy food on the market) or transfers. When these rights are insufficient, households have no choice but to modify or reduce their food consumption.

As current income is very low and quickly exhausted, individuals opt for migration or decapitalization in order to obtain the resources that guarantee their right to access food. The migration of men during periods of drought is a historical practice of the populations of the South, particularly the Antandroy populations (this point is developed in section 2.3. on climate change and the environment). These migratory practices often become permanent and help to explain the high rate of female heads of household. The transfer of responsibility from the head of household to the woman, who remains in the region of origin (IOM Madagascar, *Evidencing the impacts*, 2017), while women have limited social and economic rights, means that these households are particularly vulnerable (ONN, *Ministère de la Santé Publique*, UNICEF, 2016). Removing children from school is one response to this transfer of responsibility and to the economic and social constraints faced by female heads of household.

Decapitalisation provides households with the resources they need to buy food (SAMS, 2013; HANKE et al, 2017), but it also increases their vulnerability in the long term because it reduces their ability to respond to the next shock. The effect on vulnerability is all the greater when decapitalisation affects households' productive capacity (sale of draught oxen, tools, land, consumption of seeds) and social reproduction (sale of cooking pots)<sup>6</sup>.

Market strategies reach their limits more quickly when households are poor and have low assets. Households can also seek support from their personal networks (Gondard-Delcroix, 2021). In this way, they can mobilise their social relations to access nutritional resources. Households may rely on the support of an individual, a group of people (family, community, professional group) or an organisation (Voamamy, religious group, NGO, etc.). However, in the event of a covariant shock (all members of the network are affected at the same time, as in the case of the Kéré), only social relationships that are distant (geographically, economically or socially) are able to provide effective support. However, these practices can be costly in the long term (dependence on the *mpanarivo*). Formal transfers, whether in cash or in kind, are vital in these cases, but many studies highlight the risk of developing a culture of dependency when responses are limited to emergency situations. Social protection systems that genuinely strengthen the rights and capacities of households are to be preferred.

Thus, given the high levels of poverty, the frequency of shocks experienced by households, and the fragility of informal transfer systems in the event of a covariant shock, the practices implemented to cope with *kéré* directly compromise household food security. Whenever possible, households consume substitute foods. For example, many households consume cactus, originally intended for zebu, as a substitute for other foods. Consumption of this type of food causes major health problems. It has also been observed that a large proportion of households reduce their consumption in order to overcome the lack of food resources (IOM Madagascar, 2017; HOLAZAE, 2016). These practices, which

---

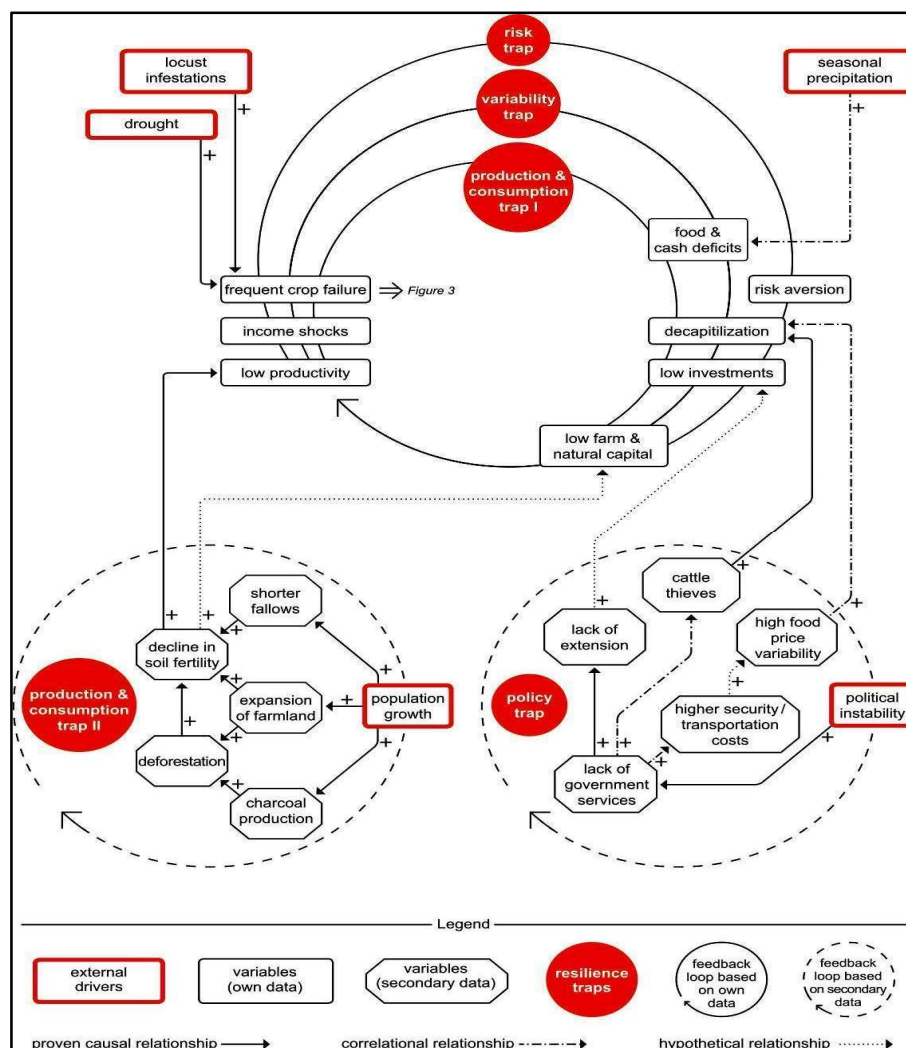
<sup>6</sup> Decapitalisation processes follow a logic that makes it possible to characterise household vulnerability (HOLAZAE, 2016). The vulnerability scale used in the Fewnsnet (2017) surveys follows this logic (see the presentation of Fewnsnet in the next section). For the agro-pastoral societies of southern Madagascar, zebus fulfil an essential symbolic function that encourages them to be preserved for as long as possible, as the sale of zebus has major consequences for the balance of local power (FIELOUX and LOMBARD, 2008).

are put in place every year during the lean periods, become established over long periods in the event of *kéré*. Such practices of nutritional deprivation and substitution are particularly worrying and increase household vulnerability (IOM, 2017).

### Food insecurity: a vicious circle and systemic logic

Hanke et al (2017) suggest that, given the pitfalls of poor development in the South, agriculture and livestock farming alone, without taking into account the systemic dimension of the issue, will not be able to provide sustainable solutions for improving people's living conditions. Natural disasters, regional insecurity and poor infrastructure all lead to major agricultural losses. These difficulties create a vicious circle that leads to decapitalisation in order to cope with agricultural losses. These processes then lead to a fall in productivity and a further reduction in harvests (see Figure 8).

Figure 8. Causal loop diagram showing different socio-ecological traps



Source: Hanke et al (2017: 45)

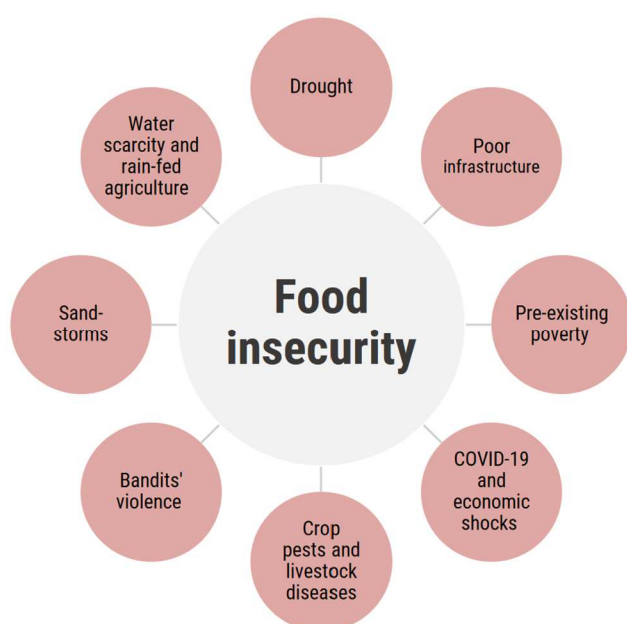
*Causal loop diagram illustrating how external factors interact with key system variables through feedback processes based on (i) causal, (ii) correlational or (iii) hypothetical relationships. The arrows with positive and negative polarity characterise the relationships between the different variables. The + polarity means that the values of the two variables change in the same direction. The - polarity*



indicates that if the value of one variable changes, the other changes in the opposite direction. Within a feedback loop, one variable may change due to an external impact (e.g. an external driver) or due to changes in another variable within the loop (Sendzimir et al. 2011). The authors discuss the socio-ecological interaction between environmental factors such as low and variable rainfall, the lack of sustainable intensification in agriculture, which results in sustained food insecurity, and several trends in environmental degradation.

The ACAPS report (2022) places particular emphasis on the multidimensional nature of the factors contributing to the food crisis (see Figure 9): while four of the factors identified relate to shocks (droughts, sandstorms, the economic consequences of the covid-19 pandemic and locust invasions), the others relate to socio-economic factors such as poor infrastructure, poverty, violence and insecurity, and the weakness of irrigated agriculture.

**Figure 9. Channels of the food crisis**



Source: ACAPS (2022: 2)

In line with this systemic vision of food and nutrition security, we can also stress the close link between access to water and nutrition through the two channels of agriculture and food. Access to sufficient quality water is a decisive factor in ensuring good food and nutrition security (UNICEF, 2016; CAETIC développement 2018). With regard to food hygiene in particular, practices for collecting, storing and consuming drinking water are the subject of specific actions aimed at protecting the water consumed from the various sources of pollution to which it is exposed. In fact, diarrhoeal diseases limit the body's absorption of the same nutrients, thereby contributing to malnutrition. Access to high-quality water, hygiene and sanitation systems is therefore closely linked to the issue of food and nutritional security.

In a system where food access rights are essentially based on agricultural production (via self-consumption or agricultural income), the analysis by Hanke et al (2017) highlights the interweaving of food access issues in a set of poverty trap mechanisms. More broadly, the work highlights the multidimensionality of food crises, suggesting the need to take account of this systemic dimension in order to strengthen rights of access to food through multi-sectoral action.



## 2.4.2. Strengthening rights of access to food through multi-sector action

A number of complementary solutions need to be implemented to tackle nutrition and food problems. Firstly, it is vital to strengthen people's right of access to food by reinforcing their means of existence and developing an enabling environment. This first aspect of the action, from a developmental perspective, will help to reduce crisis episodes. Secondly, given the severe agro-ecological constraints, information systems, warning systems and rapid response mechanisms also need to be strengthened.

### **Strengthening livelihoods to reinforce rights of access to food**

Developing programmes to strengthen household livelihoods requires a precise understanding of the dynamics of vulnerability. In line with the work of Armatya Sen, it is vital to propose approaches that not only strengthen households' financial capacities but also guarantee their access to a number of services, choices and aspirations.

From this perspective, access rights based on self-production are crucial in regions where agriculture is the main income-generating activity. Given the specific climate of southern Madagascar (a Sahelian-type climate), combining agriculture and livestock farming is a key factor in fostering household resilience to climatic conditions (Hanke et al., 2017). Complementarity between livestock and agricultural activities must be considered at several levels. At household level, the complementarity of the two activities makes households more resilient. At community level, combining the two activities offers a range of interesting socio-economic opportunities (fodder to feed livestock, soil enrichment with manure, etc.). With this in mind, it is important to think in terms of integrated systems: agro-pastoral systems, agro-ecological systems, value chains (see Agriculture, fisheries, livestock section), but with an emphasis on supporting nutrition-sensitive agriculture.

According to Marggraf (2017), diversification of income sources is essential. He stresses the importance of encouraging activities such as poultry farming, yam cultivation and opuntia seed oil production. It is also important to strengthen the infrastructure that enables the development of agricultural activities. With this in mind, setting up collective storage infrastructures is particularly effective in agricultural areas, especially for farmers wishing to sell their surplus production (Thouillot and Maharetse, 2010). HÄNKE et al (2017) make similar recommendations, stressing the importance of developing non-agricultural activities. The same authors also point out the need to build roads to open up the region, coordinate multi-sectoral investments, and improve people's access to credit and insurance services. In this respect, the MICS report (2018) highlights one of the strengths of the agricultural and food systems in southern Madagascar, where the diet is well diversified and legumes are well valued. This characteristic needs to be reinforced by development projects.

It should also be noted that not all households in the South are farmers. Particularly in the salt and mining areas, a significant proportion of households live on agricultural or mining wages and have only limited access to land. The marginal role of self-consumption as a basis for food access rights gives their access rights structure a particular structure that requires the design of specific projects. Gondard et al (2019) show the specific vulnerability of the population of sisal workers. So, in the area of food as in the other themes explored in this report, development projects and programmes must not conceal the diversity of situations in the territories and populations of southern Madagascar, reminding us of the need for response plans specifically adapted to local resources and needs.

Food issues are also closely linked to gender issues. Maternal health and nutrition are essential factors in child nutrition. Generally speaking, numerous studies show that women play a key role in social reproduction and nutrition, even though they suffer from multiple inequalities. The report on the Maharo project, carried out by [USAID and CRS \(2021\)](#), places particular emphasis on strongly gendered cultural norms to the detriment of women. Furthermore, women's lack of weight in the household is detrimental to food and nutritional security, as they are more aware of the need to diversify their diet. Particular attention must therefore be paid to women and gender issues (see section 3.3 on gender in this document).

Finally, in addition to action focused on farms and households, it is necessary to develop infrastructure and services ([ACAPS, 2022](#)) in a region that remains 'on the sidelines of development' ([Morlat and Castellonet, 2012](#)). Such a vision echoes Sen's (1981) approach, in which he points out that the process of converting resources into rights of access to food is highly dependent on the socio-economic environment and social organisation in which individuals evolve.

However, whatever efforts are made to strengthen rights of access to food from a development perspective, given the time needed to transform systems, food crises could persist during a period of transition. Agro-ecological constraints and the heightened risks posed by climate change mean that effective information systems are needed to monitor the situation.

### **The role of information systems and their close links with the players who can put in place an effective and sustainable response**

Several information systems are being implemented in southern Madagascar.

- **Early warning systems (EWS)**

Developed in the 1980s, the early warning system aims to alert and prevent the emergence of a food crisis. It was developed in response to the increasing number of droughts in the 1980s and 1990s and the inefficiency of the information systems in place at the time ([Droy & Rasolofo, 2004](#); [Enten, 2022](#)). The EWS is based on a set of quantitative indicators (rainfall, market price surveys, measurement of children's arm circumference) and qualitative indicators (decapitalisation of household assets or population movements, perceptions of managers, household surveys).

The Grand Sud region experienced severe food crises during the 1990s. Conventional statistical information systems proved ill-suited to taking account of changes in the food situation, leading to delays in the implementation of assistance programmes and errors in the targeting of this aid. The difficulty of understanding these recurring food problems led to the introduction of the EWS.

In practice, the EWS is still unable to achieve its main objective: to coordinate the interventions of the various players in order to protect households in the face of climatic conditions. According to [Enten \(2022\)](#), the complexity of the warning processes considerably hampers the responses and solutions developed. He points out that the warning system is not adapted to the context of southern Madagascar. This is a criticism that is regularly levelled at programmes in emergency zones: the lack of contextualisation of interventions. In fact, this programme has been developed in many SSA countries, particularly in the Sahel region. The replication of this programme has failed to take into account the specific characteristics of southern Madagascar. This logic follows what Olivier de Sardan describes as the travelling model ([Olivier de Sardan, 2021](#)), i.e. programmes implemented without taking the context into account and replicated in variable geographical locations.

Bearing these limitations in mind, it seems crucial to reform an early warning system that is adapted to the institutional contexts of the deep south and to the specific agro-ecological features of the region. The relaunch of the early warning system initiated in 2018 (OCHA, BNGRC and PAM, 2018) could take account of this need for contextualisation. In addition to taking greater account of the regional context, the early warning system could also be based on improved remote sensing systems.

- In 2013, the **Famine Early Warning Systems Network (FEWS NET)** launched a national livelihood zoning exercise. The report produced (FEWSNET, 2017) shows the diversity of livelihoods by region and the strategies implemented to cope with shocks. The type of strategy implemented is used to measure the state of food emergency. The strategies are ranked on a scale of 1 to 15 according to the severity of the nutrition problems associated with their occurrence. For example, level 15 refers to the consumption of seed stocks, while level 1 refers to "increased dependence on agricultural and casual labour". These 15 levels are grouped into 3 categories: (i) stress (from 1 to 6); (ii) crisis (from 7 to 11); (iii) emergency (from 12 to 15).
- **Remote sensing, use of groundwater probes and climate bulletins (UNICEF, 2022)**

The bulletin analyses data produced by the Drought Monitoring System (SMS) set up by UNICEF in collaboration with the Ministry of Energy and Hydrocarbons and the European Union. The SMS is based on satellite image processing, rainfall accumulation monitoring and groundwater data. Throughout the year, the SMS compares long-term averages with short-term data (particularly concerning vegetation cover, groundwater levels and water salinity). The extent of the differences between expected and observed data is used to define drought levels (normal, vigilance, alarm, emergency). The emergency level corresponds to an alert level. The aim of the system is to detect drought early so that a rapid response can be organised.

- **Information system on living conditions and resilience**

With a view to providing multidimensional information on the living conditions of rural households in Madagascar, the Rural Observatories Network (ROR) has for several years been producing accurate data based on household surveys at illustrative sites in Madagascar. Several sites have been active in the south (Tuléar, Bekily and Ambovombe). They have enabled research to be carried out on food security in the south, taking into account the multiple dimensions of the phenomenon (Rasolofo and Joseph, 2000; Bidou, Droy and Rasolofo, 2006; Bidou and Droy, 2007).

- **The various SMART surveys**

The Grand-Sud regions (8 districts in all) regularly benefit from nutritional surveillance surveys and analysis of the food security situation (PNAN III, 2021), particularly that of vulnerable people (pregnant women, children under 5, female heads of household, etc.)<sup>7</sup>. These surveys enable the various stakeholders to make projections and implement activities to combat chronic malnutrition: cash transfers, passive or active detection of moderate and acute malnutrition, management of cases of acute malnutrition, etc. These survey results are often used to plan humanitarian emergency activities, which can sometimes be prolonged, but can also lead to the search for long-term solutions such as climate-smart agriculture, diversification of the nutritional diet, fortification of staple foods, etc.).

---

<sup>7</sup> See Garba (2018), ONN (2018) for the Nutritional Health Survey or UNICEF (2021): *Mother and Child Health Monitoring Survey*.

This section has described some of the information systems in the Deep South. Most have been developed with a view to preventing or at least identifying potential food crises at an early stage. Others help to understand household living conditions. What is lacking, however, is a tool for capitalising on, observing and analysing the diversity of the dynamics of socio-economic change at work in the Grand Sud. Indeed, even if the name suggests that this vast region forms a homogenous whole, it has to be said that it is criss-crossed by multiple dynamics that need to be taken into account.

There are (or have been) several information systems in operation in the Grand Sud. These include the SAP, the UNICEF drought bulletin and the network of rural observatories. Those that are currently active have been developed with a view to preventing or at least identifying potential food crises at an early stage. Or they are surveys targeting a particular issue (mother and child health, nutritional surveys, etc.). To go further, it would be useful to develop a tool for capitalising on, observing and analysing the diversity of the dynamics of socio-economic change at work in the Grand Sud. Indeed, even if the name suggests that this vast region forms a homogenous whole, it has to be said that it is criss-crossed by multiple dynamics that need to be analysed to guide the actions of development projects and programmes.

## Key facts about food and nutritional security

### Key findings

The repeated episodes of food crisis in the south of Madagascar highlight the fact that the fundamentals of development are not in place and do not allow the population, which is largely dependent on agricultural production, to guarantee its right of access to food.

- Food insecurity is one of the main problems in southern Madagascar. From the 1980s onwards, episodes of kéré (literally famine in Antandroy) multiplied. In this region, the problem lies in the length of the hunger gap and the recurrence of droughts, which has an impact on acute malnutrition (emaciation). Chronic malnutrition (stunted growth) is lower here than in the Hautes Terres due to a more diversified diet.
- Because of high poverty rates and the regularity of shocks, households' already high levels of decapitalisation force them into regular food contractions during the hunger gap, which become entrenched during the kéré period. Alternative practices used by households to guarantee their right to access food have a limited impact and affect their future ability to cope (migration, decapitalisation). Informal transfers have a limited effect (particularly in the event of a covariant shock) and are potentially negative (dependency relationships), while formal emergency transfers help to develop a culture of assistance.
- Gender is a central issue. Women play a key role in social and nutritional reproduction, even though they suffer from multiple inequalities, insofar as strongly gendered cultural norms penalise women. Female heads of household, whose rate is particularly high because of male migration, are particularly vulnerable.
- Problems of access to food are systemic and interwoven into a series of poverty trap mechanisms, and food crises have a multidimensional origin.
- There are (or have been) several information systems in operation in the Grand Sud. These include the SAP, the UNICEF drought bulletin and the network of rural observatories. Those that are currently active have been developed with a view to preventing or at least identifying potential food crises at an early stage. Or they are surveys targeting a particular issue (mother and child health, nutritional surveys, etc.).

### A few recommendations

- Firstly, it is vital to strengthen the right of access to food by reinforcing livelihoods and developing an enabling environment. This first aspect of the action, from a developmental perspective, will help to reduce crisis episodes.
  - Strengthen livelihoods by implementing coordinated, multi-sectoral actions in agricultural diversification strategies and high nutritional value crops, the fortification of staple foods for the community, agro-ecology and new agricultural dynamics (see agriculture section).
  - Encourage nutrition education through community information and education (IEC) in order to change eating habits and improve eating behaviours.
  - Take into account the specific gender dimension (see section 3.3 on gender).

- Developing social protection schemes that genuinely strengthen the rights and capabilities of households deserves to be developed.
- Collective investments and relevant and appropriate public services must be designed to support agricultural and rural development: access to water (see section 2.1 in this document), strengthening collective services (e.g. storage), opening up villages and the region by building and maintaining roads and tracks, strengthening education and health services).
- Strengthening and coordinating information systems
  - Information systems that are closely linked to the players who can put in place an effective and sustainable response should be developed. The aim here is to coordinate the information system to produce an early warning with a rapid decision-making circuit to enable emergency aid to be released as quickly as possible.
  - To develop a tool for capitalising on, observing and analysing the diversity of the dynamics of socio-economic change at work in the Grand Sud. Indeed, even if the name suggests that this vast region forms a homogenous whole, it is clear that it is criss-crossed by multiple dynamics that need to be analysed in order to guide the actions of development projects and programmes.

## 3. Cross-cutting analysis: Perspectives on aid governance

Southern Madagascar has historically experienced many episodes of food insecurity, leading to multiple interventions by emergency and development institutions. Between 2020 and 2022, the region experienced a particularly marked period of food insecurity. Like those that preceded it, this period can be analysed as one of the symptoms of a trajectory of poor development based on the negative interaction of environmental and socio-institutional factors. It is therefore necessary to look at the governance of aid, as it emerges from the documents studied. Two aspects in particular emerge in the literature: on the one hand, the shortcomings of the 'project logic' (3.1), and on the other, the need for a detailed understanding of the social dynamics within aid recipient populations (3.2). Among the social dynamics, those linked to gender are particularly sensitive in southern Madagascar (3.3).

### 3.1 Dealing with the pitfalls of project logic

---

#### Key resources on project logic

---

*BROUDIC Caroline and RAZAFINDRIANILANA Tsiory, Adaptation aux changements climatiques des populations rurales au sud-ouest de Madagascar, 2020.*

Carimentrand, A. (2010). La vulnérabilité dans le grand sud de Madagascar : Bilan des systèmes d'information et d'intervention & enjeux de la coordination (p. 140).

Healy, T.M. (2018) *The deep south*. The World Bank.

Violas, D. et al. (2018) *Capitalization document on the experience of agroecological blocks*.

The documents studied enable us to highlight two major pitfalls, stemming from the very logic of the projects implemented in southern Madagascar. These pitfalls, of which many aid agencies are aware, relate to the timeframes of these projects and the difficulties of coordination between development agencies.

#### 3.1.1. Project timelines at odds with development timelines

Development projects introduce technical innovations which, if they are to be truly appropriate and socially accepted, lead to changes in practices, standards and values. These processes take time, the time of development, which cannot always take place within the timeframe of development projects. Development projects are results-driven, and must achieve their objectives in a short space of time. Furthermore, project management advocates continuous disbursement rates over the life of the project, although this is not always justified and may even be detrimental to the success of the project.

#### **Time to establish local roots**



Violas *et al* (2018) stress the importance of local roots and cultural skills in the success of a project (see the section for more on the value of a socio-anthropological approach). They stress the importance of taking the time to engage in dialogue in order to develop learning projects over the long term, based on an effective participatory rationale and giving anthropology its place (see section 3.2. dedicated to this issue).

### **Time for dialogue**

Numerous reports and articles stress the importance of dialogue with the various authority figures. Seeling (2006) in particular stresses the importance of taking the time to talk to local authorities. This point is also at the heart of the social norms approach used by UNICEF (2015) in the fight against open defecation.

### **Time to adapt and change**

Broudic and Razafindrianilana (2020) point out that people's resilience to climate change is compromised by projects that are too short term (3-4 years). The first pillar of their recommendations on adapting to climate change involves a long-term commitment to supporting changes in practices in economic activities or even in the distribution of roles and responsibilities within the household or community. They also point out that the adoption of an agro-ecological approach alone requires several years, to avoid the risk of simply passing on a few techniques that are abandoned as soon as the project ends. In their view, it is therefore essential to overcome the constraint inherent in most donors, whose funding generally does not exceed 3-4 years.

### **Negotiate deadlines with the landlord as far in advance as possible**

With this in mind, Morlat and Castellanet (2012) point out that these requirements for long-term action need to be negotiated with the funding body upstream of the project "in order to resist the culture of achievement and promote 'more humble, trial-and-error and innovative' approaches, so as to limit the negative effects of the deadlines imposed by the project logic, the difficulty of taking a step back, the establishment of routines and logistical constraints". Sequencing the actions of the same player over time as part of a successful project is also a guarantee of building on what already exists and capitalising on the timeframes of previous projects (Violas *et al.*, 2018).

## **3.1.2. Coordination faults**

The competitive dynamics between aid actors and the divergence of views and methods between emergency and development interventions lead to a lack of coordination which is detrimental to the development process. This lack of coordination is largely due to the absence of the State. It is not fulfilling its role as referee, which hampers the possibility of carrying out coherent operations over time, since funding and operators follow one another or are juxtaposed. While this is a general observation for Madagascar as a whole, it is particularly acute in the far south.

### **A competitive dynamic**

(Carimentrand, 2010) highlights the fact that the lack of coordination between the players involved in implementing projects and public policies has major consequences for poor development in southern

Madagascar. The author proposes a number of solutions to remedy this problem, such as setting up a food security coordination forum. The Humanitarian-Development-Peace Nexus is positioned precisely with this objective in mind.

### **Between emergency and development**

The competition between emergencies and development is particularly acute. [Morlat and Castellonet \(2012\)](#) recommend taking into account the permanent nature of the emergency system and integrating it into the local dynamics of sustainable development. This means: (i) anticipating periodic crises within long-term programmes, (ii) minimising the negative impact of emergency aid by better targeting and channelling aid through service companies rather than NGOs and local authorities, (iii) agreement between emergency operators and development operators to integrate the needs and resources of the emergency system into the development system.

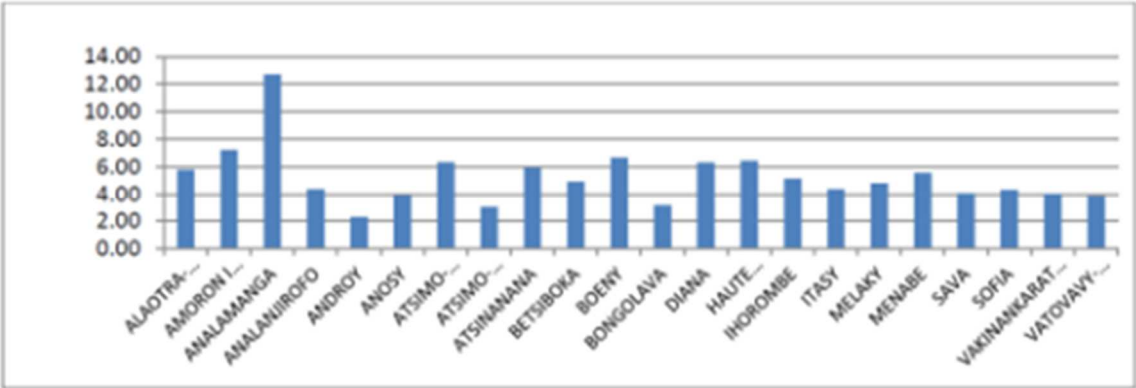
### **The State, the great absentee**

One of the recurring findings of reports analysing the situation in Madagascar's deep south is the absence and shortcomings of the state (see [Carimentrand, 2010](#); [Morlat and Castellonet, 2012](#); [Healy, 2018](#); [ACAPS, 2022](#)). Several articles and reports link Madagascar's stalled development trajectory to socio-institutional factors. As early as 2005, [Hugon \(2005\)](#) analysed this particular trajectory as the product of specific institutional and socio-political factors. This line of analysis is taken further by [Razafindrakoto et al \(2017\)](#): economic and socio-political factors combine to produce a dynamic of poor development characterised by high political instability, a high level of corruption, a narrow power-sharing elite, the weakness of intermediary bodies and checks and balances, and a GDP per capita and level of human development that are low and declining over the long term. Such arguments are echoed in historical analyses ([Galibert, 2011](#)) and political science ([Darbon et al., 2018](#); [World Bank, 2018](#)). In short, Madagascar is a typical example of a neo-patrimonial state ([Médard and Fauré, 1982](#)) characterised by the close interweaving of political and economic levers, which is reflected in terms of governance by a good-quality administrative façade and practices of under-administration (see Figure 10).

Thus, while the quality of the legislative process is certain, the resources made available for the application of public policies are insufficient. This is particularly true of the resources allocated to the decentralised and devolved levels of government. [Rakotondrainibe \(2022\)](#) places particular emphasis on this point in the context of water policy. He shows that the appropriate texts have existed since 2003, but that the lack of human and material resources means that they cannot be applied effectively (see the Water section for more details).

Figure 10: Rate of administration by region per 1000 inhabitants, 2009

Figure A1: Taux d'administration par région pour 1000 habitants – année 2009



Source : Ministère de la Fonction Publique, du Travail et des lois Sociales, INSTAT

Comment: Under-administration is the norm throughout Madagascar, but it is particularly glaring in the far south. Androy has the lowest rate of administration in the country, and the Antsimo Andrefana and Anosy regions have a higher rate only because of the presence of a major regional capital, this being particularly true for Tuléar.

**The South politically marginalised**

This state of affairs is the consequence of the systematic marginalisation of the South by all the political regimes that have succeeded one another since colonisation up to the present day (Healy, 2017), and is rooted in socio-political factors linked to the functioning of the Malagasy central state. The marginalisation of the South hinders the potential for human and economic development and also explains the resurgence of insecurity in the area. Admittedly, the landlocked nature of the region and the weak presence of the State in all its forms, particularly the forces of law and order, encourage the movements of the *Dahalo* and the *Malaso*<sup>8</sup>, organised bandit groups, which in turn hamper the region's development opportunities. However, it should not be overlooked that Colonel Faneva's forceful interventions have only partially succeeded in defusing the *Malaso* dynamic. The *Malaso* movements can therefore be seen as a local social response to the poor development of southern Madagascar.

<sup>8</sup> The Dahalo are ox thieves. Initially linked to local traditions, these movements have evolved into armed banditry groups. The Malaso are bandit groups that attack not only oxen but any other form of wealth.

## What you need to remember about the pitfalls of project logic

### Key findings

The documents studied enable us to highlight two major pitfalls, stemming from the very logic of the projects implemented in southern Madagascar.

1/ Development projects introduce technical innovations which, if they are to be truly appropriate and socially accepted, lead to changes in practices, standards and values. These processes take time, the time of development, which cannot always take place within the timeframe of development projects.

2/ The competitive dynamics between aid actors and the divergence of views and methods between emergency and development interventions lead to a lack of coordination which is detrimental to the development process. This lack of coordination is largely due to the absence of the State. It is not fulfilling its role as referee, which hampers the possibility of carrying out coherent operations over time, since funding and operators follow one another or are juxtaposed. While this is a general observation for Madagascar as a whole, it is particularly acute in the far south.

### A few recommendations

Many aid agencies are aware of these pitfalls. In fact, the formation of the Humanity-Development-Peace Nexus is designed to encourage coordination between players.

- Giving projects time (time to take root locally, time for dialogue, time to adapt and change)
  - Negotiate timeframes with the landlord as far upstream as possible (for those implementing the projects)
  - Accepting longer timeframes (for lessors)
- Strengthen coordination efforts between stakeholders. This is the aim of the document collection created as part of this study. Its continued existence would contribute to the sharing of practices, capitalisation and informed action. Specific recommendations on this point are given in the general conclusion.

## 3.2 Understanding "beneficiaries": the contribution of socio-anthropology

---

### Key resources on the contributions of socio-anthropology

---

LAVIGNE DELVILLE Philippe, *Has anthropology been useful to the Mahavotse microfinance institution?* "Coopérer aujourd'hui", GRET, 2012.

DELIGNE Antoine et MAHARETSE Jérémie, *Méfiance, rivalités et enjeux de pouvoir autour d'un projet de développement. Le cas du projet " Objectif Sud " en pays tandroy (Madagascar)*, "Coopérer aujourd'hui", GRET 2009.

THOUILLOT Floriane and MAHARETSE Jérémie, *L'appui au stockage des récoltes : Une solution pour la sécurité alimentaire dans les zones agricoles difficiles? L'exemple du Grand Sud de Madagascar*, 2010, GRET

GONDARD-DELCROIX Claire & al. *Understanding local social protection systems. Elements of analysis in three fokontany in the south of Madagascar. Working paper, Protect research project*, 2021

An abundance of literature incorporates "cultural" issues into the analysis of the problems of southern Madagascar. However, this runs the risk of making 'culture' one of the major problems of the South, one of the main causes of the region's poor development. On the contrary, the contributions of socio-anthropology provide a nuanced, less simplistic view of these complex issues.

### 3.2.1. Understanding local social dynamics: an inadequate socio-anthropological perspective

#### Little use made of the social sciences

The socio-anthropological documents consulted show the extent to which social structures and power relationships are major factors in understanding the dynamics of projects. The "unexpected effects" of projects, as defined by Olivier de Sardan, modify their impact in complex ways. It should be noted, however, that few projects offer a genuine socio-anthropological analysis in their evaluations, sometimes confining themselves to a very general reference to cultural obstacles in the South (see below).

However, we should mention the studies carried out by GRET as part of the Objectif Sud programme in the 2000s. [Pierre Lavigne-Delvigne \(2012\)](#), analysing a micro-finance project, highlights the value of mobilising the social sciences in the reality of a project. This mobilisation must be the subject of a compromise, making it possible to reconcile the two logics, that of the project and its logical framework, and that of the social sciences and their desire for complexity. According to the author, for the social sciences to serve development projects, the collaboration must be included in the contract with the donors, with a dedicated budget line, and run throughout the project cycle. What's more, the

social sciences need to be easy to access: not erudition or exhaustiveness, but operationalisation and accessibility.

In addition to this publication on microfinance, other socio-anthropological studies linked to Objectif Sud highlight local power dynamics and their influence on the impact of projects. [Floriane Thouillot and Jérémie Maharetse \(2010\)](#), for example, analyse the difficulties encountered by a collective crop storage project, due to conflicts between lineages, in a context of social change brought about by the prevalence of migration. As a second example, [Antoine Deligne and Jérémie Maharetse \(2009\)](#) give four accounts of situations in which a technical team working on a development project in Tandroy country is confronted with the logic of local stakeholders. The latter do not view the presence of foreigners on their territory as innocent, and observe it with suspicion. The project's activities interfere in the interplay of local rivalries, and the technicians are faced with conflicts and disagreements that can call into question the results of their work. This raises the fundamental question of how to integrate a development project into a society that does not share the same representations and values, and how best to manage the contradictions, and even conflicts, that are bound to arise between the "project" logic and the "local" logic.

The use of the notion of "participation", common in project rhetoric, can also be questioned by socio-anthropological analyses. The reference text here is [Chantal Blanc-Pamard and Emmanuel Fauroux \(2004\)](#): *L'illusion participative: Exemples ouest-malgaches*. The article sets out the limitations of participatory approaches in a context marked by local lineage logics. Participatory approaches are described as illusions: local people play along with participatory meetings because they understand that aid is conditional on their participation. In reality, local authority dominates, and if the project (even if validated at the participatory meeting) is not in line with the interests or opinions of the notables, then there will be no practical implementation. Nearly 20 years later, the study by [RINDRA CONSULTING \(2021\)](#), carried out in support of the MAHARO project on the governance component, comes to much the same conclusions, albeit adopting the current language used by donors, and focusing on "inclusive and equitable community participation".

### **Qualifying postulated "successes": the case of cash transfer**

Numerous cash transfer programmes ("fiavota") have been initiated in southern Madagascar. The four documents we consulted evaluating these programmes date from the late 2010s ([RAKOTOMANANA Faly, RANDRIANATOANDRO Zo Tahiana and RAVELOSOA Julia Rachel, 2018](#); [MOREY Mitchell and SEIDENFEL David, 2018](#); [A2DM and CONFORME, 2018](#); [MOREY Mitchell and SEIDENFELD David, 2019](#)). These documents all tend to show the effectiveness of the cash transfer schemes deployed, but in reality they do little to grasp their actual scope. On the one hand, they do little to capture targeting bias, and on the other hand, even when comparing a target group and a control group, it is difficult to isolate the effect of the transfers themselves, due to diversions, redistributions, etc., which can have a negative impact on the results.

This is shown in particular in the working paper by [Claire GONDARD-DELCROIX et al \(2021\)](#). By studying social protection mechanisms in Androy using a mixed methodology (combining systemic, qualitative and quantitative approaches), this study reveals targeting biases, communication problems, internal arrangements and so on. Unexpected effects that are probably not as unexpected as all that, but that nobody seems to want to highlight. Here we find the strength of what socio-anthropologists call a "traveller model" (already mentioned in 2.4, in relation to EWS), which is imposed on everyone and benefits many players in the aid world.

### 3.2.2. Is culture an obstacle to projects?

From reading many project documents, it could be deduced that the main obstacle to the project is first and foremost cultural. Here again, socio-anthropological research helps us to avoid any simplistic and essentialist conception of the question of culture.

#### **The question of *fady* (taboos)**

Many resources describe socio-cultural *Fady* and representations that can negatively influence development projects, both for certain practices and for certain spaces (such as sacred forests). In terms of practices, one example is the difficulties encountered by UNICEF's *Community lead total sanitation* project (UNICEF, 2015), which aims to reduce open defecation (Gaya, Balfour, Thomas, 2015). Generally speaking, all water-related projects are confronted with local taboos. As water has a purifying role, it is surrounded by numerous taboos, as analysed in the study carried out by Lazzarini (2012) for ACF. This means that aid operators have to rely on the lineage authorities to lift certain taboos where necessary. The academic literature has also dealt extensively with the issue of taboos (see Asturi, 2007; Tengö, M., & Heland, J. V., 2011; or Poirier, Randriamarana, D., Razaramparany, D., 1978).

There seem to be two problems with incorporating taboos into projects: on the one hand, the cost and duration of studies enabling taboos and their place in social regulations and local power structures to be properly studied; on the other, the risk of creating an image of a region that is incapable of change, anchored in ancestral ways of thinking.

#### **Companies undergoing transformation**

On the contrary, the socio-anthropological literature analysed for this study highlights the transformations experienced by societies in southern Madagascar. Some projects manage to "negotiate" the overcoming of certain taboos by using *dina* (such as the *cajanus* in GRET's agroecological projects). New cultural norms are developing, under the influence, for example, of the Christianisation of part of the population.

Back in 1987, Emmanuel Fauroux highlighted the major changes underway since the 1960s. In particular, (1) changes in agricultural practices, with a decline in livestock farming and an increase in irrigated rice growing, (2) major migration processes, which are helping to redefine socio-economic balances, and (3) a widening of individual differences at the micro-local level and power structures that are evolving with the theft of zebus. On the subject of migration and its transformative impact, see also Bernard Moizo and Samisoa (2001), who, in their chapter entitled 'Permanent migration and symbolic appropriation of the environment: the example of the Tandroy of the Vineta plateau', study the migration and sedentarisation of the Antandroy to another area of south-west Madagascar, and the resulting land and social transformations.

More recently, Antoine Deligne and Jérémie Maharetse of GRET, in the aforementioned document "Méfiance, rivalités et enjeux de pouvoir autour d'un projet de développement. Le cas du projet 'Objectif Sud' en pays tandroy (Madagascar)", they highlight the fact that while the lineage tradition is an important reference, it is mobilised according to local contexts and project circumstances (Deligne, Maharetse, July 2009). The project must be seen as a disruption to the local system, revealing pre-existing conflicts and tensions. It therefore seems necessary to take account of local dynamics, to



understand them well, without submitting to them (which would mean giving up all intervention). This again argues in favour of integrating socio-anthropologists into the entire programme cycle.

And this perspective seems just as valid for nature conservation programmes, as shown by Benjamin PASCAL's thesis (2008). This geography thesis is entitled "De la terre des ancêtres aux territoires des vivants : Local governance issues on the south-west coast of Madagascar". It highlights the need to analyse the dynamic processes of development and interaction that are established between several types of stakeholder and institutions involved in the management and use of the same area, namely the Ambohibola coastline. The author refers to the 'social space' of the different groups involved, and to the 'lived space' of the stakeholders.

Over and above culture and tradition, social structures are constantly changing, integrating projects, recycling them and outlasting them. Analysing the way in which projects interact with societies is a useful way of understanding the factors that block or hinder the adoption of development projects or the innovations they promote. This transformation is particularly well illustrated by the question of gender (3.3.).

## What we need to remember from socio-anthropological analyses

### Key findings

Socio-anthropological analyses have two major benefits.

1/ They make it possible to take account of the specific features of local contexts. This is something that projects usually tend to overlook, because of their tendency to duplicate actions that are considered to be effective (e.g. *cash transfer* programmes). In particular, they lead us to look at local power structures, which are often a determining factor in the success or failure of a project.

2/ They enable us to understand the weight of the taboos and burdens of tradition, while avoiding the trap of an "essentialist" approach, which tends to view the populations of the South in terms of a fixed culture incapable of transformation. In fact, we are dealing with societies that are constantly changing.

### A few recommendations

- The importance of the influence of local social structures and dynamics on the success or failure of projects means that we need to systematically carry out socio-anthropological studies, both upstream and throughout the project cycle. While this may be seen as costly, it can prevent many failures.
- However, the socio-anthropological approach must remain accessible to non-specialists. The aim is not to produce a monograph on each village, but to devise ways of producing socio-anthropological data that are accessible to aid donors and operators.
- As stated in the conclusion to point 2.2, a "socio-anthropology of innovation" approach could be initiated, thanks to dedicated funding. The DeSIRA programme, already mentioned, could be mobilised. The necessary agro-ecological transformation of farming systems in the South should systematically benefit from this type of approach, in order to increase the acceptability of these socio-technical proposals.



### 3.3. Take gender issues into account

---

#### Key resources on gender

---

- ANDRIANAONITSOA V., 2015, Appui pour l'intégration de la dimension Genre. ASARA Project
- CANAVESIO R., 2013, Les fronts pionniers des pierres précieuses de Madagascar: des espaces d'émancipation pour les femmes? Géocarrefour, Vol. 88/2.
- FIELOUX M., 1990, Femmes terres et boeufs, Aombe n°1, MRSTD-ORSTOM, 145-162
- LAZZARANI A., 2012, Gestion communautaire des infrastructures d'eau potable en pays Mahafaly. Memo anthropo Wash, ACF, 29 p.
- MATTERN C., RAVELOMANDEHA F., 2012. Exploratory anthropological study: social organisation and political structures on the Mahafaly Plateau , 59 p.
- MORLAT L., 2009 La gestion des impluviums en Androy (Madagascar) Un levier pour le changement social? Coll. Études et travaux en ligne n°24, Gret, 93 p.
- SHAPIRO B., WOLDEYS A. RAMILISON H. RAKOTONDRATSIMA A. et al, 2007, Nourishing the Land, Nourishing the People (chap. 9, Acknowledging the role of women in the development), IFAD

One of the fundamental elements of the economic and social organisation of rural societies is the differentiation of rights, activities and responsibilities between women and men. This is combined and articulated with other social stratifications, such as hierarchies between lineages or membership of a dominant socio-economic group.

However, the Constitution of Madagascar, partly translated into the Malagasy legislative system, enshrines equality between men and women. All the texts are summarised in an OIF document (2019) entitled "Tableau de l'égalité homme-femme à Madagascar". Despite recent progress (on inheritance and access to land in particular), there are still discriminatory provisions, such as in the Family Code, where women do not have equal rights with men to make decisions affecting the household. Domestic violence, which is very common, is still poorly addressed, despite the adoption in 2019 of a law to combat gender-based violence (GBV).

But there is a gap between the application of laws in contexts where customary rules are often more discriminatory towards women.

This is one of the reasons why it is so difficult to implement measures to reduce inequalities between men and women, despite the fact that national and international institutions have made gender one of the priorities of their development cooperation. This is particularly marked in the Grand Sud region, where the delay can be explained by the weight of a certain vision of the place of women, but also because knowledge on this issue remains scattered in the region, and little academic research has been conducted to decipher the foundations of these inequalities between men and women. Project background studies, dissertations and reports have been carried out, but these documents are not widely distributed.

#### 3.3.1 Gender relations are embedded in lineage and patriarchal societies

## Gender: a social construct

The general framework for analysing gender issues has evolved thanks to the many studies that have been carried out in different contexts on the relationship between gender and development since the 1970s in anthropology and sociology. Broadly speaking, the concept of gender describes **the social construction of masculinity and femininity**. This approach rejects an essentialistic view of the roles of men and women, a view that is still very often put forward in the Deep South, both by local people and by many project stakeholders: essentialism justifies the assignment of women to certain roles (domestic space, absence from decision-making structures) on the basis of biological differences between men and women. The approach can be summed up as follows: whereas the notion of "sex" refers to the biological differences between women and men, the concept of "gender" refers to the **way in which society assigns differentiated and hierarchical roles and statuses to men and women**, with the most valued roles being assigned to men. These roles are defined by social, religious, historical, cultural and political norms.

The work of anthropologists has shown that the construction of gender relations is a multidimensional process with symbolic components that are translated into the political, material and social frameworks of each society. This means that among the Antandroy, the Masikoro, the Mahafaly or the Bara, these relationships may differ in terms of access to land, inheritance rules and rights of access to responsibilities and power. As women have fewer rights of access than men, their range of options for dealing with shocks is narrower. Being relatively marginalised or invisible in public life and organisations, they have a smaller network for securing their living conditions than men.

Another common feature of southern societies is that the lineage structure is also based on the movement of women between two or more lineages, according to their own marriage rules, often favouring clan exogamy. Admittedly, the weakening or even break-up of the lineages is profoundly changing the way society is regulated (Fiéloux, 1990), but early marriages of girls are still very common, and their frequency has increased during the health crisis. The current consequences of these social rules on the human development of girls are very clear: girls are no longer going to school, there are health problems and maternal mortality among women due to early pregnancies. This is why socio-anthropological knowledge is needed to understand these social phenomena, and needs to be updated, because the dynamics of gender relations are changing rapidly (for a more detailed understanding, see Morlat, 2009, p.20 and 21).

### A fairly limited corpus of documents focusing on gender

A number of documents identified in this capitalisation study were given a **gender marker** when they took significant account of gender issues, regardless of the theme considered (water, health, agriculture). These documents have the following characteristics:

The corpus collected is fairly small (20 documents) and not very representative of the diversity of situations in the Deep South: many documents concern the Androy, but more rarely other regions or other cultural groups.

\* The number of scientific publications, including articles in journals and book chapters, is fairly small. In 1990, M. Fieloux was one of the few anthropologists to take an interest in the transformation of gender relations in land tenure and livestock farming in the south-west, among the Masikoro, in the Antseva corridor. More recently, R. Canavesio (2013) has worked on aspects of female migration on mining pioneer fronts.

\* However, reports and studies carried out by projects reflect a continuing interest in this issue on the part of certain operators over more than a decade. These include GRET, which has produced a number

of reports based on its various projects in the South (Objectif Sud, Asara, Aina, etc.), ACF and CRS. High-quality work has been carried out with a socio-anthropological approach. Its objectives are to

- answer a development question based on a project activity such as water infrastructure management (Morlat, 2009; Lazzarini 2012);
- reflect on the gender approach developed by the projects (Andrianaonitsoa, 2015, for the ASARA project, Shapiro 2010 for the PHBM project, Upper Mandrare Basin project);
- improve knowledge of the social organisation of the population by taking into account women, who are often invisible in this type of study (Mattern and Ravelomandeha, 2012) for the Mahafaly);

\* In fact, these documents focus on the context of the intervention area of the projects that took gender into account, but many parts of the Deep South were not covered, because gender issues were not a concern for those involved and socio-anthropological research was not pursued on an ongoing basis. In the south-west, for example, after the work of the Orstom-University of Tuléar team, production dried up.

\* Many food aid or nutrition education programmes are in fact aimed at mothers and young children, for whom they are primarily responsible. The social factors explaining malnutrition, for example, are often mentioned but rarely dealt with in depth.

### 3.3.2. Analyse the context and adopt gender-sensitive tools and indicators

Given the deep-rooted nature of gender relations in social structures, it is clear that it is necessary to better document the context of projects from this angle, something that is rarely done upstream of interventions. Women's economic activities, whether in agricultural production, livestock farming or crafts, are often poorly understood: the nature of their activities, income and control over this income, decision-making power over these activities, access to resources (land, credit, equipment, etc.). It is also important to improve information systems to be able to monitor the commitments made by projects to integrate the gender approach into their activities, which has become a condition for access to funding, and then taken into account in ex-post evaluations.

#### **Taking account of women's "invisible work": using time clocks**

As in many parts of the world, women living in the Deep South are assigned domestic work (water, firewood, meal preparation, housekeeping), as well as *care* work (looking after and educating children and other family members): this is what is known as "reproductive" work; men tend to focus on market activities and so-called "productive" work. The separation between women's and men's work is therefore not egalitarian: the "productive" work attributed to men generates resources that enable them to exercise power in various forms, especially as their role in public affairs encourages their participation in collective choices and therefore their political empowerment. Conversely, women's unpaid work limits their ability to make choices because they have no income and less time for other activities. In this region, domestic chores are particularly time-consuming and energy-intensive because of the difficult living conditions (distance from water sources, difficulties in obtaining wood fuel).

In order to gain a better understanding of gender inequalities and analyse the opportunities for women to participate in economic and political activities in their area, particularly those supported by projects, development programmes therefore need to quantify, even approximately, the tasks and time spent on unpaid domestic and *care* work. This makes it possible to understand certain obstacles to women's participation in the activities initiated by the project and to consider ways of alleviating them. **An**

**essential tool for this is the time-use survey.** This tool makes it possible to visualise the distribution of tasks and workloads on a daily, weekly, monthly or seasonal basis, and thus to target the best times to carry out activities with them, together or separately, in order to avoid the de facto exclusion of one or other category. It is also a tool that can be used to visualise gender inequalities in the distribution of paid and unpaid working hours.

Time-budget surveys carried out on a national scale and using a 24-hour survey procedure are fairly cumbersome and costly, and the only one carried out in Madagascar was in 2003. However, time clocks can be used to approach this question: the usual use of time by men and women in a given environment and according to season is recorded. This was done by the ASARA project and clearly reflects the differences between the dry and rainy seasons.

*Example of the time clocks developed in the Asara project (ANDRIANAONITSOA, 2015): example of the dry season*

FEMMES				HOMMES			
Horaires	Tâches	Durée tâches reproductives	Durées tâches productives	Horaires	Tâches	Durée tâches reproductives	Durées tâches productives
6h	Chercher de l'eau Allumer le feu Préparer le petit déjeuner	1h		6h/7h	Sortir les zébus de l'enclos		30 min
7h/8h	S'occuper des volailles		30 min	7h/11h30	Travailler au champ		3h
8h/11h	Apporter au champ le petit déjeuner Travailler au champ	30 min					
11h/12h	Chercher l'eau et le bois de chauffage Préparer le déjeuner	1h		11h30/12h	Rapporter le bois de chauffe et le casser	30 min	
12h/13h	Déjeuner à la maison			12h/13h	Déjeuner à la maison		
13h/14h	Repos Et/ou s'occuper des enfants Et/ou faire la lessive	1h		13h/14h	Repos		
14h/16h	Travail au champ ou potager		2h	14h/17h	Travailler au champ		3h
16h/17h	Chercher l'eau et le bois de chauffage	30 min					
17h/19h	Piler le maïs ou couper le manioc Préparer le dîner	2h		17h/17h30	Rapporter du bois de chauffe et le casser	30 min	
				17h30/18h	S'occuper des zébus		30 min
				18h/19h	Repos		
19h/20h	Dîner Echange en famille			19h/20h	Dîner Echange en famille		
20h/21h	Travaux artisanaux			20h/6h	Repos		
21h/6h	Repos						
TOTAL	ACTIVITES DANS LA JOURNEE : 12h30	6h	6h30	TOTAL	ACTIVITES DANS LA JOURNEE : 8h	1h	7h

#### Distribution of productive and reproductive work by gender

*"Men and women work almost the same amount of hours on the farm in the rainy season. They work side by side on common activities such as preparing the soil and sowing for maize growing or weeding for cassava and rice growing; they may also carry out specific activities one after the other, such as preparing the rice fields for the man and transplanting the rice plants for the woman; or harvesting the cassava for the man and preparing it for storage for the woman. The working day is very long for both, up to 11 hours a day.*

*Gender disparity arises when men and women return home after working in the fields. For the four ethnic groups, reproductive activities, commonly known as housework, are carried out exclusively by women with the help of their daughters (...). These reproductive activities, which take up an average of 4 to 6 hours a day, added to the 11 hours of agricultural work, add considerably to women's daily workload.*

*In the low season for agriculture (Asotry), farm work is less intense. Nonetheless, the women's workload does not diminish, as they are left with the other activities that they have to carry out throughout the year. These include market gardening, poultry rearing, basketry, sewing and embroidery. These so-called "extra" activities are specifically for women, as they are reserved for them and provide them with their own income".*

*There is another gender disparity: in addition to the agricultural work carried out with her husband, and the reproductive activities carried out exclusively by women, women take on these additional activities on their own. This is the case for basket-making among Antesaka women, and sewing and embroidery among some Bara women. These women work until very late at night to carry out these activities, after all the other activities of the day have been completed.*

(Andrianaonitsoa, 2015, p.14-15 )

Severe constraints on the allocation of time, both in terms of total hours and the frequency of obligations (such as personal care activities) can restrict women's range of opportunities, their mobility and their participation in projects or organisations. The burden of unpaid work, which falls almost exclusively on women and girls, also limits women's opportunities to develop their productive activities, which are often essential to cover the costs of looking after themselves and their children.

#### The multiplicity of women's tasks

*"In short, a heavy workload weighs on women because of these multiple activities, but what's more, much of this female work is "invisible", partly because several of these activities are carried out simultaneously and overlap: For example, the woman works in the field alongside her husband, while keeping an eye on her young child, whom she has brought with her, and preparing lunch to be eaten on the spot; and secondly, the gender stereotype of considering this situation of women as "natural and banal" is still strongly anchored in the minds of both men and women, but also at the level of project managers". ((Andrianaonitsoa, 2015, p.20)*

#### Controlling resources: land and livestock

In ASARA's gender analysis (Andrianaonitsoa, 2015) of 4 ethnic groups (Antandroy, Antanosy, Antesaka, Bara), "the general rule of succession is that female children do not inherit land. Only sons inherit plots of land left by their fathers, and if in rare cases the daughter receives a share, this share will always be minimal compared to that of her brother". (p.16). Women have access to land through marriage, on plots lent to them by their husbands. The same applies to zebus, to which they have limited access: no inheritance but sometimes a few head when they marry, which are then managed by their husbands. In the case of zebus used for farming (trampling rice paddies, draught power), women are never given priority for their use in the household, even if they own the animals. The rules governing the division of property in the event of divorce are very unfavourable to women, even though through their work they have contributed to increasing the herd or purchasing property.

However, the following trends can be observed:

- the transformations brought about by certain development operations have improved women's access to productive resources: irrigated plots for rice growing or market gardening (such as the PHBM), access to micro-credit thanks to joint guarantee schemes (Vola Mahaso, CECAM), etc.
- raising small ruminants (goats) or small livestock (chickens, etc.) is a resource accessible to women, over which they have control and which enables them to build up some reserves to cope with certain shocks.

#### Work on family fields: an illustration of resource control

*There is no real remuneration for the woman, since the income from the work carried out in the man's field is placed entirely in his hands, and he is responsible for giving his wife the money he is willing to give her to meet the family's needs (food, clothing), and possibly her own needs. Generally, because of the modest sum she receives, the woman limits her purchases to kitchen utensils, clothing, household linen and furniture (Andrianaonitsoa, 2015, p.21).*

#### Understanding intra-family organisation

In addition to the relative lack of knowledge about women's work, their access to resources and inheritance rules (for land and livestock), there is another area that needs to be better understood: the internal organisation of families: decision-making, the number of single-parent households headed by women, transfers of resources, etc.



Single-parent or single-person households are households made up of a single adult without a spouse. This adult may be single, widowed, separated, divorced or 'abandoned' (a term used by many women and introduced in the response procedures in some questionnaire surveys). Single-parent households are defined as households with children or other dependents, and single-person households are defined as households where the person lives alone.

The proportion of female-headed households is particularly high in the Grand Sud. According to the latest population census (RGPH 2018), the proportion of households headed by women is almost 40% in the Ambovombe-Androy district, and is also very high in other districts and communes. The average size of female-headed households is 4 people, compared with 5.2 for male-headed households.

Given that women have less access to resources (land, decision-making), their vulnerability is increased. However, this figure covers quite different situations. Because of non-residential polygamy (wives do not live in the same compound, men have wives in several villages), it is difficult to target single-parent households headed by women: some women are really alone and without outside help, and some are declared heads of household even though they are the wives of polygamous men. Statistical services have not developed effective tools for detecting these situations, mainly because of difficulties in representation, polygamy being specific to certain societies in the South.

### **Early marriage: an obstacle to development**

Social and family pressure forces young girls and women to accept customs such as arranged marriages when they are still children. According to the UNFPA, the Tuléar region has the highest rate of early marriage: 69% of girls aged between 20 and 25 have been married before the age of 18. In Androy, it is often teenage girls under the age of 15 who are married off. The resulting early pregnancies have serious consequences for women's health (disabling complications or high risk of death). Androy is the region with the highest number of births to teenage girls (15-19) in the country (245 per 1,000 women aged 15-19, MICS 2018 survey over the 3 years preceding the survey, the national average being 150). The TFR (total fertility rate) is high (8 children per woman), combined with low contraceptive prevalence. This situation is observed at all the sites, with a particularly worrying rate at Mahatalaka, in the wetlands of Anosy, where marriages are arranged during childhood with the payment of a dowry of zebus and money to the parents. Little girls are sometimes even brought up with their future in-laws until they reach puberty, when they are married off. However, many of these unions are unstable, with young women abandoned by their husbands and left alone with their children for varying lengths of time, as remarriages are also fairly common. As a result, girls' opportunities for empowerment through education are limited, as they stop school early and are withdrawn or excluded when they become pregnant. These conditions weigh heavily on women's ability and opportunities to participate in development activities or collective organisations.

Furthermore, the maternal mortality rate among women aged 15 to 49 remains high at national level and has fallen only slightly in recent decades. This rate varies greatly depending on the area (rural/urban), the availability of health services and the average age at first birth. Moreover, one of the main causes of maternal death is linked to clandestine abortions, as the country has maintained its ban on abortion in all situations (including where there is a vital risk to the mother).

These few themes illustrate the inequalities between women and men in an environment that remains very much marked by patriarchy and practices linked to a specific socio-cultural context, far removed from the commitments made by the country to reduce gender inequalities. However, in areas where development projects are taking these issues into account, there are noticeable changes. Women are

attending meetings, speaking out and taking on more responsibility, reflecting an improvement in their *empowerment*.

### 3.3.3. Focus on a few themes

Although gender issues are present in all development themes, they are often "invisible" in the documents analysed (part 2). Without being exhaustive, we will present below a few themes where the gender issue is particularly problematic.

#### Migration: upheavals in environments and gender relations

In the far south, the most significant migratory movements concern migration from the Androy to other regions of Madagascar: this has been going on for a long time and has increased over the last few decades as a result of successive crises and a trajectory of poor development, which is pushing people to seek new opportunities. These migrations are causing profound upheavals in family structures and gender relations.

There are several types of migration:

(i) To cities: some migration to cities is for survival during food crises. The settlements may be temporary or permanent. The search for new resources changes the situation of women: sometimes they gain greater autonomy through the development of commercial activities, but they are also often exposed to increased vulnerability, having to look after young children and being destitute (IOM 2017 Evidencing the impacts of the humanitarian crisis in southern Madagascar on migration, and the multisectoral linkages that drought-induced migration has on other sectors of concern).

(ii) Towards the agricultural colonisation front, towards the south-west as far as the Menabe, where sometimes whole families leave to settle, but often the men leave alone and the women with their children remain in the *tanindrazana* (land of the ancestors) with the elderly parents (see Rakotoariseheno et al., 2022 Autonomie des femmes de l'Androy et du Menabe dans le contexte de la migration et de la gestion de conflits).

(iii) Mining, with precious stone mines that can become areas of emancipation for women (Canavesio R. 2013), but they are also places where they are highly exposed to gender-based violence, such as prostitution.ézh

#### Nutrition and maternal and child health: priority actions for women

Humanitarian action is often directed at women and children, who are considered to be the most vulnerable. Nutrition programmes for children involve their mothers, because of their involvement in childcare. They are also aimed at pregnant women, who often suffer from anaemia and malnutrition, leading to poor child development that persists after birth.

Région	Mortalité néonatale	Mortalité Infanto-juvénile
Atsimo Andrefana	15	76
Androy	24	56
Anosy	17	74

The MICS 2018 survey shows that neonatal and infant mortality rates in the Grand Sud are among the highest in the country (10-year average).

To better support the programmes implemented, actions aimed at reducing the root causes of these situations are needed: working with communities to combat early marriage, involving men in children's nutritional education so that they understand the issues, strengthening reproductive health programmes by also involving communities. (MICS, 2018 Survey Summary 2018, Unicef, 2018 Socio-Cultural Insights for Social and Behaviour Change Campaigns on Exclusive Breastfeeding, Infant Vaccination, Handwashing and Drinking Clean Water in Madagascar).

### **Water and sanitation: difficulties in involving women in infrastructure management**

Because of the division of labour, the role of women in water supply is central. Their participation in the management of facilities therefore seems necessary and justified. Although their role as users is now widely recognised, they are still not sufficiently involved in the decision-making and management processes, to the detriment of the efficiency and sustainability of the infrastructure. On the whole, the associations created around them have not shown any dynamism, some seem non-existent, others "dormant", men often dominate and women feel ousted. (Raharinjanahary et. al 2006).

"Local conceptions of the status of women and public space do not support this. Decision-making positions in community life are monopolised by men, and there is little openness to sharing this power with the other sex. This distribution of roles is so deeply entrenched that women do not seek, or even wish, to challenge the position they have been given. We know of many cases where the management methods proposed by a project team are the subject of an apparent concession on the part of the population, rather than a real consent to the evolution of social roles" (Morlat, 2009, p.8).

Three studies on "gender and water" are particularly relevant:

- on the "Evaluation of actions implemented on the theme of "gender and water" by the Local Development component of the Objectif Sud project" (Raharinjanahary et. al 2006)
- on "Impluvium management" (Morlat, 2009)
- On "Community management of drinking water infrastructure in Mahafaly country" (Lazzarini, 2012)

### **Agriculture and productive activities: more difficult to take into account**

The profound changes in rural systems in recent decades have had a major impact on gender relations. These dynamics were already observed during the cotton boom in the 1980s (Fiéloux, 1990): the new economic activities carried out by women will have repercussions at all levels: the place of men and women within the lineage, gender relations within the couple, the way in which property is devolved, etc. These transformations are manifested, on the one hand, by the new agricultural and non-agricultural activities carried out by women: organisation of work and methods of devolving property, etc., and, on the other hand, by the way in which women are involved in the production of goods. These transformations are manifested, on the one hand, in the new agricultural and non-agricultural activities carried out by women: organisation of work and methods of access to the various means of production (land, labour, etc.), and, on the other hand, in the use of women's own income in a world where what is known as 'wealth' or 'property' (*ihanaia*) is, for women and men alike, synonymous with the possession of oxen.

"In 1985-86, in the Ankililoaka area, a third of the holders of cotton plots of less than 10 hectares ("paysannat") were women. This figure, even if slightly overestimated, is indicative of a movement involving women of all ages and from all walks of life, determined to build up their personal capital,

even if it meant working non-stop, moving from one activity to another, domestic work, agriculture, trade in food products, handicrafts (basketry, alcohol)... (Fieloux, 1990).

However, unlike issues relating to health and nutrition, gender is rarely taken into account in programmes aimed at developing agriculture and livestock farming. Agro-ecology, which is a development approach that seems particularly relevant to development in the South (see 3.1), could change this trend. Agro-ecology is an approach based on the possibilities offered by ecosystems, but also on a number of social, technical, economic and political dimensions. Implementing a fair and equitable food system therefore requires us to move on from the question "what are the contributions of women in agriculture?" to the question "how can food and agricultural systems be transformed in an equitable way that strengthens the place of women?" One of the answers is the promotion of a gender-sensitive agro-ecological model: women's participation in training, roles in groups and decision-making structures. GRET's activities in the Androy region have been trying to integrate this dimension for several years.

### **Collective structures: organisations and groups**

Although Malagasy law has enshrined equality between men and women, customary law, which is generally unequal towards women, prevails, especially in rural areas. While women can discuss matters within the private family circle, they are often unable to do so in public.

The problem of the high illiteracy rate among women must be raised, as it reinforces their lack of self-confidence due to their socio-cultural status, and even creates fear of anything written, and of anything linked to administrative procedures. Asarap.26

That's why changes can only be made by negotiating with men at different levels: first and foremost within families (fathers and husbands), but also within communities and in particular with the 'elders'.

*Malagasy women have some room for manoeuvre, such as the right of misintaka, a customary right that has been institutionalised in the law of the land: the temporary abandonment of the marital home in the event of an argument or adultery by the husband, in order to return to his parents, in which case the husband is obliged to come and beg forgiveness and make amends to his parents-in-law by offering an ox.*

*While the republican system has given equal citizenship to all men and women, in Madagascar everyone has a very specific role within each social group, which differs from one region to another, and the equality of rights provided for in the law is not respected. So we need the help and mediation of the elders and their traditional power to change mentalities and achieve results. They are both interfaces and fundamental relays between tradition and modernity". (Rakotoariseheno et al., 2022)*

### **Key facts about gender**

#### **Key findings**

More and more, development projects and programmes are seeking to integrate a gender approach and contribute to societal transformations towards greater equality between women and men. However, changes in gender relations in the Grand Sud region still fall far short of the targets set by national and international commitments, particularly MDG 5.

1/ Shared findings: gender inequalities are still very significant and are tending to worsen as social and environmental conditions deteriorate

2/ Projects and initiatives are struggling to integrate the gender dimension into their activities despite national and international incentives and commitments.

- The projects have few women in positions of responsibility in the teams because of the difficulties of working and living conditions in the South, but also because of the lack of qualified human resources available from the South.
- Gender training is too superficial and poorly integrated. A participatory action-research process carried out with the project team, such as the one underway at Afafi-Sud, is an interesting approach (Arpege project).

3/ Activities aimed specifically at women are still often limited to nutrition and maternal and child health. Productive activities are often not very gender-sensitive.

#### **A few recommendations**

- Strengthen and deepen gender analyses of development projects before they are implemented (rather than after the fact).
- Analyse and better document the "women heads of household" category in order to target aid and support operations more effectively.
- Using simple tools such as "time clocks" to understand the distribution of activities between women and men and any potential bottlenecks.
- Take action at institutional level: decentralised or devolved authorities, schools, health structures to change the way women are viewed and their place in society.
- Strengthen actions to give women better access to resources and greater control over decision-making
- Support organisational work with women: groups, associations, etc., which contributes to women's self-confidence and empowerment.
- Undertake training and monitoring work with project teams on gender issues, by adapting the tools available, which are sometimes too far removed from the context.
- Involve men and traditional authorities to gain acceptance for changes in women's status.

## Conclusion: Pursue and deepen the capitalisation dynamic to inform the common strategy of the Humanitarian-Development-Peace Nexus

As the report progresses, each section concludes with specific recommendations relating to the topic in question: water, agriculture-livestock-fisheries, environment and climate change, food security and nutrition, project approach, socio-anthropological dimensions, gender. The recommendations made in this general conclusion section of the report relate to the continuation and deepening of the capitalisation process initiated as part of the CapSud study, with the aim of informing the strategy for coordinating the actors and actions at the heart of the Humanitarian-Development-Peace Nexus objectives.

### 1. Recommendations relating to the sustainability of the tool for archiving and making available the bibliography produced on the Grand Sud

#### **Presentation of the system**

As part of the CapSud study, we identified, referenced, classified and archived 227 bibliographic resources relating to southern Madagascar. The tool chosen for archiving the reference library is **Zotero, which is** free, open source, easy to use, collaborative and participative. Because of these characteristics, it seems to correspond in every way to the needs identified by the Nexus. All Nexus members will have easy access to archived references. However, the expert team recommends that modification rights to the database should not be opened up to all users, as this would jeopardise its proper management and expose it to a variety of risks, such as the inadvertent deletion of references or the inappropriate modification of records.

#### **Ensuring the long-term future of the archiving system**

In order to guarantee the system's long-term future, the expert team recommends entrusting its management under an annual service contract to the IISS (International Institute of Social Sciences), a Madagascar NGO that contributed to the CapSud study. As part of its mission to support its partners in the South, the IRD has trained members of the IISS in the use of Zotero and, having used the tool as part of the appraisal, the team has demonstrated proven skills in this area.

The expert team also recommends that a professional documentalist be called in from time to time to perfect the referencing system. The documentalist from the Bordeaux Science économique laboratory, a partner in the study, could be involved in this.

If the system is to be sustainable, Nexus members will need to share all new reports to facilitate archiving and referencing. It also requires regular documentary research to ensure that all academic and scientific documents published on southern Madagascar are properly archived.

The expertise team draws Nexus' attention to the management of intellectual property rights. Some scientific articles or books are not open access. If they are to be disseminated as part of the bibliographic reference database, this legal issue needs to be resolved.

### **Use for projects with a memory of what preceded them (rules of good conduct)**

The aim of the archiving system is to encourage information sharing and capitalisation by making existing literature available. The expert team recommends that this dissemination should be as wide as possible to enable the various players working in the South, as well as students and academics wishing to contribute through their work to the production of knowledge about the South, to have access to these sources of information. The question of property rights raised in the previous point will be all the more important the wider the public authorised to consult it, but in the opinion of the expert team, free access to information is an essential condition for unleashing intellectual potential on the South, whether as part of an academic, scientific or operational approach.

From the point of view of those involved in development, the bibliographic database must be consulted before any development project, programme or policy is launched, in order to have a clear memory of the past and to be able to draw on available knowledge and expertise when designing projects.

## **2. Recommendations relating to the further development of the capitalisation process: observatory and monitoring-evaluation**

### **The CapSud bibliographical study, key findings**

#### *Multidimensionality and systemic nature of development*

An analysis of the existing literature on southern Madagascar shows that there is a consensus on the multidimensional nature of the constraints in southern Madagascar and the need to take account of the socio-institutional and political economy dimensions if solid, sustainable development operations are to be successful. This observation points to the systemic nature of development balances, which requires consideration of the various dimensions of the phenomenon, their interactions and their dynamics at several scales.

#### *A double observation of thematic overexposure and underexposure*

Although the existing corpus is extremely rich, it is surprising to note that regional, thematic or analytical entries are both over- and under-exposed. In many works, for example, the South is assimilated to the Androy region, which is only a small part of the Malagasy South. There is a vast body of literature devoted to this specific region, certainly because it is one of the main places where aid agencies operate. However, the diversity of the South needs no further demonstration, whether in terms of its agro-environmental characteristics or its socio-cultural features (see the map of the South presented in Figure 1 of the introduction). It therefore seems necessary to gain an insight into the dynamics of the southern region as a whole in terms of the various key development issues.

On the other hand, certain themes are largely under-exposed or even virtually absent. These include, for example, intensive cotton growing and its role in the environmental degradation of southern Madagascar, and the issue of livestock farming and its close links with agriculture in the context of



pastoral societies in the south. Finally, other themes are often mentioned without any really in-depth and convincing treatment of the subject. Gender is a particularly critical issue in southern Madagascar, but studies of sufficient scope and detail have not been carried out.

### **CapSud bibliographical study, main recommendations**

One of the main recommendations is the need to *develop the capacity to analyse the whole of the South in its regional and thematic diversity*. This overall knowledge is a prerequisite for guiding concerted and harmonious development action in Madagascar's Deep South. Detailed knowledge of the different regions and the different key themes is also a prerequisite for the local implementation of development projects, in order to adapt the action to the specific characteristics of the intervention area. There can be no generalisation of action plans, which must be adapted to the relevant level (catchment area for water management, for example). So, although several information systems and numerous independent surveys exist, setting up an observatory to diagnose and monitor and evaluate development initiatives in the South is an important point.

With this in mind, the expert team's recommendations are threefold: firstly, to implement coordinated and modular actions in terms of both time and space; to this end, to maintain close links with cross-disciplinary research that is independent of projects; to take account of local balances of power; to analyse the relationships between aid players in the Grand Sud; and to .

### **Coordination, temporal and spatial modularity of actions**

As in any context characterised by the negative interaction of the various elements of a mal-development trap, integrated, coordinated and long-term actions are to be preferred for the deep south of Madagascar. Furthermore, the diversity of socio-ecological systems and the diversity of forms of local negotiation and micro-local systems of power call for the modularity of projects according to the areas of intervention. The modularity of projects over time is also an element to be recommended in order to counteract the potentially disabling 'unexpected effects' of projects. This spatial and temporal modularity requires fine-tuned management, backed up by a permanent action-evaluation system in the form of a cross-disciplinary monitoring and research system that is independent of the projects.

### **Conduct cross-disciplinary research operations that are independent of projects**

The projects implemented generally include a monitoring and evaluation dimension. However, these are focused on the achievement of project objectives with a view to evaluating the project and/or its impact. While such evaluations are necessary in order to capitalise on and compare projects, assess the replicability of projects and consider their reorientation or adaptation, they do not provide a comprehensive approach to development issues in southern Madagascar. The literature review also highlights the lack of cross-cutting studies of development issues in the south. The CapSud study clearly shows the multi-dimensional nature of the balance of maldevelopment and how agro-climatic challenges interact with the socio-institutional components of development. It therefore underlines the importance of developing independent, cross-disciplinary research operations to capture the diversity of issues in the South and their temporal dynamics, beyond the focus of individual projects.

An observatory methodology, applied to the issue of crises and resilience in the South, would make it possible to achieve this objective. Such an observatory would make it possible to combine **observations at different scales:**

- On a national and international scale, to understand the interactions between development players in southern Madagascar
- on the scale of the Greater South region as a whole, to capture current dynamics (population, trade, changes in vegetation cover, migration, etc.)
- on the scale of sites, chosen to be illustrative of the diverse problems of southern Madagascar, in order to analyse the meso-socio-economic dynamics on economic, political, social and historical themes and understand the context in which the projects fit.
- at household level, for a detailed analysis of living conditions, practices for protecting these living conditions, livelihood strategies, and the reasons for joining, not joining and hybridising the actions proposed by the projects.

The aim of the observatory would be to produce long-term information systems to **monitor developments** at these different levels.

On the basis of the data produced, it will be possible to carry out **mixed methods of cross-sector evaluation of public policies and development projects and programmes**. Such an evaluation method would combine qualitative and quantitative methods in a coherent and integrated way, in order to capture the systemic dimension of development issues which, as we have seen in this report, help to explain the poor development balance in southern Madagascar.

### **Taking account of local balances of power**

When a project is implemented, when new resources are brought to the local level, there is a great risk that the effects produced will differ from those expected, due to interactions with the local social game. Micro-local power structures (Fauroux, 2002) generate unexpected effects that can limit the impact of the project to a single social group, thwart the project's effects, or even make it impossible to deploy. Knowledge of local power structures and the local social climate makes it possible to better understand power issues and prevent local organisations from being monopolised by one group to the detriment of others.

Knowledge of local power structures and the social climate helps us to better understand power issues and to ensure that development projects are not monopolised by one group to the detriment of others.

Once the project is up and running, we need to identify the "unexpected effects" and analyse their scope. Are they in line with the direction of the project? Or, on the contrary, do they contribute to its ineffectiveness or even sabotage? Depending on the results of the analysis, adaptive measures can be implemented to ensure the project's longevity and reinforce its intended effects. While it may be useful for the diagnosis to include a participatory dimension, it is important to be aware of the possible biases of the exercise, linked to strategies for capturing aid for the benefit of a sub-group (see specific point below), and not to be satisfied with this form of diagnosis. On the contrary, it should be integrated into a broader diagnostic system that also includes a meta-analysis of local power structures, the production of objective and subjective data and the triangulation of results.

### **Analysing relations between aid providers in the Grand Sud**

The south of Madagascar is characterised by the presence of a large number of development and emergency players, leading to a multiplication of programmes and interventions in the greater region. This situation poses major problems of coordination and efficiency in the implementation of

development projects. Coordination problems are thus partly responsible for the regional malaise (Carimentrand, 2010; UNICEF, 2011). Given this situation, it seems important to observe and analyse how the organisations working in southern Madagascar coordinate their activities.

To achieve this, the expert team recommends observing and studying the network of organisations working to implement programmes and policies in southern Madagascar. The aim of this approach is to visualise the coordination network of organisations working in southern Madagascar. In addition to providing a precise description of the network of players, this tool will also enable the organisations concerned to discuss coordination problems.

Several methods can be envisaged for building the coordination network of organisations in southern Madagascar, either as part of a participatory approach or as part of a classic social network analysis approach.

## List of bibliographical references included in the Capsud study

A2DM (2018) *Final evaluation of the project "Emergency response to support vulnerable person affected by El Nino in great South of Madagascar"*. CARE & UE.

Abdou, S.A. (2016) *Vulnerability and building community resilience to environmental challenges: the case of the South Androy Region of Madagascar*.

Abdou, T.Y. (2018) *Evolution de la secheresse dans la region d'antsimo andrefana des 1980-2016*.

Abdouramane, C. (2005) *Contribution a L'etude De La Secheresse Et De L'aridite Dans Le Sud De Madagascar*.

ACAPS (2022) *Madagascar food insecurity crisis in the grand sud regions*. ACAPS.

Ahmed, A., Laîné, M. and Samisoa (2017) *Etude anthropologique pour l'identification d'une strategie d'intervention pour la stabilisation dans le sud de madagascar*, p. 101.

Alphonse, R.N. (no date) *"L'intégration de la Gestion des Risques et des Catastrophes dans le Plan Communal de Développement"*, p. 124.

Amnesty International (2021) *It will be too late to help us when we are dead*.

Andrés-Domenech, P. *et al.* (2014) 'Sustainability of the Dry Forest in Androy: A Viability Analysis', *Ecological Economics*, 104, pp. 33-49. Available at: <https://doi.org/10.1016/j.ecolecon.2014.04.016>.

Andriamalala, G. and Gardner, C.J. (2010) 'The use of dina as a natural resource governance tool: lessons from Velondriake, southwest Madagascar', *Tropical Conservation Science*, 3(4), pp. 447-472. Available at: <https://doi.org/10.1177/194008291000300409>.

ANDRIAMASINORO, J.O. (2018) *Adaptation aux changements climatiques.à madagascar: structuration et probléma tisa tl on de l'action publique nationale*. UNIVERSITÉ DU QUÉBEC À MONTRÉAL.

ANDRIANANTENAINA, F.L.N. (2019) *Prevision de la secheresse au nord ouest de madagasacar*. Dissertation.

ANDRIANAONITSOA, V. (2015) *Appui pour l'intégration de la dimension Genre Rapport des analyses de Genre réalisées dans les communautés d'intervention et au sein des opérateurs du projet ASARA*, p. 86.

ANDRIANIRINA, N. (2013) *Agriculture for development: relevance and limitations at the scale of rural households. A comparative dynamic approach for three regions of Madagascar*. Supagro Montpellier.

ANDRIANTSALAMA, R.E. (2005) *Projet de développement agricole de la commune de beraketa, district de bekily region de l'androy*. Dissertation.

Andrimampionona, R.S. (2011) *Evaluation of the effectiveness of a strategy to improve young children's nutrition in two vulnerable and contrasting regions of Madagascar*.

*Support for small-scale and agri-food chains in rural areas: lessons from the Idea project in Madagascar* (2009). GRET.

AQUATERRE (2018) *Qualitative research to inform koica health/education programme in anosy*.

Astuti, R. (2007) 'La moralité des conventions : tabous ancestraux à Madagascar', *Terrain*, (48), pp. 101-112. Available at: <https://doi.org/10.4000/terrain.5041>.

Augustins, G. (2000) 'Paul Ottino, Les champs de l'ancestralité à Madagascar. Parenté, alliance et patrimoine: Paris, Karthala/Orstom, 1998, 685 p., bibl., index', *L'Homme*, (154-155), pp. 774-778. Available at: <https://doi.org/10.4000/lhomme.2738>.

BAHYA-BATINDA, D. *et al.* (2018) *Results of the quantitative baseline survey: process evaluation of the "resilience communes" programme implemented by the world food programme in the androy region - madagascar*.

Balaya, J. and a compléter (2003) 'L'arbre dans l'espace agricole du plateau de Vineta (Madagascar) -', *Cahiers de l'Agriculture*, 12, pp. 15-21.

World Bank (2011) *Madagascar Economic and Sector Study (Agricultural markets in Madagascar: constraints and opportunities)*. World Bank.

Bidou, J.-É. and Droy, I. (2007) 'Pauvreté et vulnérabilité alimentaire dans le Sud de Madagascar : les apports d'une approche diachronique sur un panel de ménages:', *Mondes en développement*, n° 140(4), pp. 45-64. Available at: <https://doi.org/10.3917/med.140.0045>.

Bidou, J.-E., Droy, I. and Rasolofo, P. (2006) 'Risque climatique et vulnérabilité alimentaire dans le Sud de Madagascar : question d'échelle, questions de méthode', p. 6.

Bidou Jean-Etienne and Droy Isabelle (2009) 'Décrire la construction temporelle des vulnérabilités : observatoires ruraux et analyse historique des moyens d'existence dans le sud malgache', in *Risques et environnement : recherches interdisciplinaires sur la vulnérabilité des sociétés*. Paris: L'Harmattan, pp. 155-170. Available at: [https://www.researchgate.net/publication/47540689\\_Decrire\\_la\\_construction\\_temporelle\\_des\\_vulnerabilites\\_observatoires\\_ruraux\\_et\\_analyse\\_historique\\_des\\_moyens\\_d'existence\\_dans\\_l\\_e\\_Sud\\_malgache](https://www.researchgate.net/publication/47540689_Decrire_la_construction_temporelle_des_vulnerabilites_observatoires_ruraux_et_analyse_historique_des_moyens_d'existence_dans_l_e_Sud_malgache).

Blanc-Pamard, C. and Fauroux, E. (2004) 'L'illusion participative: Exemples ouest-malgaches', *Autrepart*, 31(3), p. 3. Available at: <https://doi.org/10.3917/autr.031.0003>.

BNGRC and UNDP (2016) *Recovery and resilience plan for the districts most affected by the drought triggered by El Nino in the Grand Sud of Madagascar*.

BROUDIC, C. and RAZAFINDRIANILANA, T. (2020) *Adaptation aux changements climatiques des populations rurales du sud-ouest de madagascar*, p. 56.

Brunet, F., Lothe, P. and Ramarokoto, J. (2011) *Evaluation finale du volet communal et évaluation a mi-parcours du volet intercommunal du programme accords*, p. 62.

Cabot, J. and Hoerner, J.-M. (1981) 'Les sociétés rurales du Sud-Ouest malgache face à l'aménagement', *Cahiers d'outre-mer*, 34(136), pp. 305-320. Available at: <https://doi.org/10.3406/caoum.1981.2997>.

CAETIC Développement (2018) *Study on the causes of acute malnutrition in eight communes in southern madagascar*.

Canavesio, R. (2013) 'Madagascar's gemstone pioneer fronts: spaces of emancipation for women?', *Géocarrefour*, 88(Vol. 88/2), pp. 119-129. Available at: <https://doi.org/10.4000/geocarrefour.9046>.

Canavesio, R. (2015) 'Migration in southern Madagascar: between occasional droughts and structural economic crisis', *Autrepart*, 7475(2), pp. 259-278.

CARE International (2009) *Unites d'appui pour le developpement local (uadel) anosy*.

Carimentrand, A. (2010) *La vulnérabilité dans le grand sud de madagascar: bilan des systèmes d'information et d'intervention & enjeux de la coordination*, p. 140.

Charmoille, A. (2018) *Acces a l'eau dans le 'grand sud' de madagascar évaluation du potentiel hydrogeologique au niveau des zones d'intervention de l'ong avsf projets: zoloke, sohavelo et fanantenana*, p. 88.

AINA Consortium. (2017) *Improving food security in the South and South-East of Madagascar*.

CREAM (2013) *Monographie région androy*.

CRIPPS, A. et al. (2020) *Socio-anthropological study of social representations of disability in the Atsimo-Andrefana and Androy regions of Madagascar*.

CRS (2021a) *Baseline survey for the TABIRY project*.

CRS (2021b) *Firangà II Baseline Survey*.

Decary, R. (1932) 'Nouvelles cultures entreprises dans l'Extrême Sud de Madagascar', *Revue de botanique appliquée et d'agriculture coloniale*, 12(127), pp. 195-197. Available at: <https://doi.org/10.3406/jatba.1932.5115>.

Deleigne, M.-C. (2009) 'Vers l'institutionnalisation de l'école dans l'Androy (Madagascar)?'

Deligne, A. and Maharetse, J. (2009) *Méfiance, rivalités et enjeux de pouvoir autour d'un projet de développement*. GRET.

Delille, H. (2011) *Perceptions et stratégies d'adaptation paysannes face aux changements climatiques à Madagascar*, p. 108.

Desbureaux, S. and Damania, R. (2018) 'Rain, forests and farmers: Evidence of drought induced deforestation in Madagascar and its consequences for biodiversity conservation', *Biological*

*Conservation*, 221, pp. 357-364. Available at: <https://doi.org/10.1016/j.biocon.2018.03.005>.

Dostie, B., Haggblade, S. and Randriamamonjy, J. (2002) 'Seasonal poverty in Madagascar: magnitude and solutions', *Food Policy*, 27(5-6), pp. 493-518. Available at: [https://doi.org/10.1016/S0306-9192\(02\)00063-5](https://doi.org/10.1016/S0306-9192(02)00063-5).

Droy, I. (1992) 'Les périmètres irrigués du Sud de Madagascar : le contexte socio- économique du transfert de gérance', p. 48.

Droy, I. *et al* (2010) 'Une pauvreté rurale étendue et multiforme', in B. Gastineau et al (eds) *Madagascar face au défi des Objectifs du millénaire pour le développement*. IRD Éditions, pp. 53-85. Available at: <https://doi.org/10.4000/books.irdeditions.1877>.

Elmqvist, T. *et al* (2007) 'Patterns of Loss and Regeneration of Tropical Dry Forest in Madagascar: The Social Institutional Context', *PLOS ONE*, 2(5), p. e402. Available at: <https://doi.org/10.1371/journal.pone.0000402>.

Enten, F. (2022) 'L'IPC à l'épreuve du kéré :Des pérégrinations d'un modèle voyageur en pays malgache', *Revue internationale des études du développement*, (248), pp. 31-58. Available at: <https://doi.org/10.4000/ried.445>.

Esoavelomandroso, M. (1987) 'La dimension culturelle du développement de l'élevage dans le sud-ouest de Madagascar', p. 4.

*Evaluation of the Upper Mandraré Basin Development Project - Phase II - Final Evaluation* (2009). Report No. 2062-MG. IFAD.

FANOKOA, P.S. (2007) *Dynamique des pratiques paysannes face à la déforestation de l'extrême sud de Madagascar*. Versailles St Quentin en Yvelines.

FAO (2016) *Risk analysis and resilience planning*.

FAO (2020) *Pro-Acting*.

FAO (no date) *Evaluation of the impacts of cyclone haruna on livelihoods, food security and the vulnerability of affected populations*.

FARE, Y. (2019) *Mid-term review pnud fem project: pacarc" improving capacities for adaptation and resilience to climate change in rural communities in analamanga, atsinanana, androy, anosy and atsimo andrefana in madagascar*.

Fauroux, E. (1987) 'L'approche anthropologique des macro-dynamiques sociales: pour une application à l'ouest Malgache', pp. 27-42.

Fauroux, E. (1989) 'Une étude pluridisciplinaire des sociétés pastorales de l'ensemble méridional de Madagascar', *Cah. Sci. Hum.* p. 9.

Fauroux, E. (2001) 'Dynamiques migratoires, tensions foncières et déforestation dans l'ouest malgache', p. 15.



Fauroux, E. (2002a) *Comprendre une société rurale: une méthode d'enquête anthropologique appliquée à l'Ouest malgache*. Paris: Ed. Gret (Études et Travaux).

Fauroux, E. (2002b) 'Les sociétés rurales de l'Ouest malgache : des transformations profondes et complexes', *Afrique Contemporaine*, (202-203), pp. 111-132.

Fauroux, E. (no date) 'Pour des Unités d'observation permanente dans l'ensemble méridional de Madagascar'.

FEWS NET (2017) *Madagascar grand south livelihood zones revision*. USAID.

FEWS NET (2018) *Madagascar Enhanced Market Analysis*. Washington, D.C.: USAID.

FAVOTA (2017) *Interventions within the framework of the fss additional fund nutrition and social safety nets in southern madagascar*.

'Fiches techniques FAO ONN' (no date).

Fiéloux, M. (1990) 'Femmes terre et boeufs', in *Aombe Elevage et société : l'exemple du couloir d'Antseva*. MRSTD ORSTOM. (Aombe, 1), pp. 145-162.

Fieloux, M. and Lombard, J. (2008) 'Le riche beugle'. Available at: <https://doi.org/10.4000/africanistes.2234>.

Fisher, M. (2009) *L'adoption de Bracharia par les Éleveurs Mahafaly : Un Étude du Projet de AVSF Dans la Commune de Betioky*.

Freudenberger, K. (2010) *Paradise lost? Lessons from 25 years of usaid environment programs in madagascar*. IRG.

Funk, C. (no date) *How climate change contributed to Madagascar's food crisis, The Conversation*. Available at: <http://theconversation.com/how-climate-change-contributed-to-madagascars-food-crisis-167370> (Accessed: 3 May 2022).

Garba, I.M. (2018) *Enquetes sur la situation nutritionnelle et la mortalite retrospective dans 3 districts de madagascar: tsihombe et beloha dans la region d'androy ampanihy dans la region d'atsimo andrefana*.

Garba, M.I. (no date) *4 enquetes nutritionnelles et de mortalite smart 2017 dans le grand sud de madagascar: enquetes des districts de ambovombe et bekily dans la region d'androy ; ampanihy et betioky dans la region d'atsimo andrefana*, p. 64.

GNEGNE, S., ANDRIANTSARAFARA, L. and ALI, F. (no date) *Rapport final: 4 enquêtes nutritionnelles et de mortalité smart 2017 dans le grand sud de madagascar : enquêtes des districts de beloha, tsihombe, amboasary et taolagnaro*.

Gondard, C. et al (2021) *Comprendre les systèmes locaux de protection sociale. Éléments d'analyse dans trois Fokontany du Grand Sud Malgache*, p. 61.

GOUDET, S. (2005) *Diagnostic de l'état nutritionnel et des pratiques alimentaires des jeunes*

*enfants en relation avec la vulnérabilité alimentaire territoriale dans la région de l'Androy*, UNIVERSITE DE MONTPELLIER II.

Graeber, D. (2004) 'Catastrophe: Magic and History in Rural Madagascar', p. 22.

Hänke, H. *et al.* (2017) 'Social-ecological traps hinder rural development in southwestern Madagascar', *Ecology and Society*, 22(1). Available at: <https://www.jstor.org/stable/26270090> (Accessed: 15 January 2022).

Hänke, H. and Barkmann, J. (2017) 'Insurance function of livestock, Farmers coping capacity with crop failure in southwestern Madagascar', *World Development*, 96, pp. 264-275. Available at: <https://doi.org/10.1016/j.worlddev.2017.03.011>.

Harrington, L.J. *et al.* (2021) 'Attribution of severe low rainfall in southern Madagascar, 2019-2', p. 38.

Healy, T.M. (2018) *The deep south*. The World Bank.

von Heland, J. and Folke, C. (2014) 'A social contract with the ancestors-Culture and ecosystem services in southern Madagascar', *Global Environmental Change*, 24, pp. 251-264. Available at: <https://doi.org/10.1016/j.gloenvcha.2013.11.003>.

Hervé, D. *et al.* (2015) 'Post-forest transitions in dry deciduous forest and xerophilous thicket (south-west Madagascar)', in *Agrarian transitions in southern Madagascar. Résilience et viabilité, deux facettes de la conservation*. IRD, pp. 179-192.

HOLAZAE, N. (2015) *Analyse sociologique de la realite du "kere" dans la region androy (cas de la commune urbaine d'ambovombe androy)*. UNIVERSITE D'ANTANANARIVO.

Humanité Inclusion (no date) *Food aid for people with disabilities and disability reduction for children suffering from malnutrition or undernutrition*.

Ibrahima, H. and Rakotonirainy, M. (2016) *Mission fao/pam d'évaluation des récoltes et de la sécurité alimentaire à madagascar*. FAO/WFP, p. 92.

ICCO and SAF/FJKM (2006) *Programme Sécurité Alimentaire Sud-est de Madagascar*.

INSTAT (2019) 'Madagascar MICS 2018 Multiple Indicator Cluster Survey'.

International Organization for Migration (2017) *Evidencing the impacts of the humanitarian crisis in the southern Madagascar on migration, and the multisectoral linkages that drought-induced migration has on other sectors of concern*.

Isnard, H. (1951) 'La colonisation agricole à Madagascar', *Revue de géographie alpine*, 39(1), pp. 97-125. Available at: <https://doi.org/10.3406/rga.1951.4134>.

Janicot, S., Reinert, M. and Institut de recherche pour le développement (France) (eds) (2015) *Changement climatique: quels défis pour le Sud? Conference of the Parties (United Nations Framework Convention on Climate Change)*, Marseille: IRD éditions.

Kaufmann, J. and Tsirahamba, S. (2006) 'Forests and Thorns: Conditions of Change Affecting Mahafale Pastoralists in Southwestern Madagascar', *Conservation and Society*, 4(2), pp. 231-261.

Kaufmann, J.C. (2001) 'La Question des Raketa: Colonial Struggles with Prickly Pear Cactus in Southern Madagascar, 1900-1923', *Ethnohistory*, 48(1-2), pp. 87-121. Available at: <https://doi.org/10.1215/00141801-48-1-2-87>.

Kibler, J.-F. and Perroud, C. (2005) *Concevoir une démarche de développement local*. GRET.

Lavigne Delville, P. (2012a) *Has anthropology been useful to the Mahavotse microfinance institution?* GRET.

Lavigne Delville, P. (2012b) 'Microfinance et mobilisation de l'anthropologie : une expérience dans le sud malgache', *Bulletin de l'APAD* [Preprint], (34-36). Available at: <https://doi.org/10.4000/apad.4122>.

LAZZARINI, A. (2012) *Memo anthro wash community management of drinking water infrastructure in Mahafaly country*.

LEBIGRE (dir.), J.-M. et al. (1997) *Milieux et Sociétés dans le sud-ouest de Madagascar* (Îles et Archipels, 23).

Lhéliteau, F. and Violas, D. (2015) *Rapport final d'activité du projet SOA (volet Gret) Janvier 2012-Janvier 2015*, p. 84.

Lombard, J. (1995) 'Le territoire, image portée de l'imaginaire social', p. 6.

Lombard, J. and Fieloux, M. (1989) 'La fête de l'argent ou le bilo du coton', 4(25), pp. 499-509.

Mandrindra, M.A. (2016) *Evolution de la secheresse dans la region d'androy depuis 1983 jusqu'a 2014*.

Marcus, R.R. (2007) 'Where Community-Based Water Resource Management has Gone Too Far', p. 31.

Marcus, R.R. (2012) 'Macropolitics and Microperceptions: Is There a Possible Market Answer to Water Woes in Ambovombe-Androy, Madagascar?', *Natural Resources*, 03(04), pp. 329-339. Available at: <https://doi.org/10.4236/nr.2012.34030>.

Mattern, C. and Ravelomandeha, F.M.P. (2012) *Etude Anthropologique Exploratoire: L'organisation Sociale Et Les Structures Politiques Sur Le Plateau Mahafaly Madagascar, Région Atsimo Andrefana*, p. 59.

Ministry of Water, Sanitation and Hygiene (2021) *Government responses to famine or kere in the south*.

Ministère de l'Environnement et du Développement Durable (2019) *Plan National d'Adaptation au Changement Climatique (PNA) Madagascar*.

MINISTERE DE L'INTERIEUR, BUREAU NATIONAL DE GESTION, and DES RISQUES ET DES CATASTROPHES (2015) *Plan de contingence pour le grand sud insecurite alimentaire et nutritionnelle*.

Home Office and Decentralisation (2019a) *Localisation of Sustainable Development Goals Local Consultation Report - July 2019*.

Ministère de l'Intérieur et de la Décentralisation (2019b) *Localisation des Objectifs de Développement Durable Rapport de consultation locale - Juin 2019 Région Atsimo Andrefana*.

Ministère de l'Intérieur et de la Décentralisation and PNUD (2019) *Localisation des Objectifs de Développement Durable Rapport de consultation locale - Juillet 2019 Région Anôsy*.

Ministère de l'Intérieur et de la Décentralisation and PNUD (2019) *Localisation des Objectifs de Développement Durable Rapport de consultation locale - Juillet 2019 Région Androy*.

MITAHASOA, A.M. (2007) *Kere dans le sud: analyse et perspectives (cas du district d'ambovombe androy)*.

MOIZO, B. (1997) 'Des esprits, des tombeaux, du miel et des boeufs : perceptions et utilisation de la forêt en pays Bara Imamono', in.

Moizo, B. (2001) 'Contrôle de l'espace et enjeux fonciers en pays bara : les relations autochtones-migrants', p. 15.

MOIZO, B. (2003) 'Perceptions et usages de la forêt en pays bara (Madagascar)', *Bois et Forêts des Tropiques* [Preprint].

Moizo, B. and Samisoa (2001) 'Migrations définitives et appropriation symbolique du milieu : l'exemple des Tandroy du plateau de Vineta', in *Sociétés paysannes, transitions agraires et dynamiques écologiques dans le sud-ouest de Madagascar*. CNRE/ORSTOM. (Conference proceedings), pp. 64-73.

Morey, M. and Seidenfeld, D. (2018) *Fiavota Phase 1 Emergency and Recovery Cash Transfer in Madagascar*.

Morey, M. and Seidenfeld, D. (no date) *Impact Evaluation of UNICEF's Let Us Learn Cash Transfer Supplement Programme in Madagascar*.

Morlat, L. (2009) *La gestion des impluviums en Androy (Madagascar) Un levier pour le changement social?*

Morlat, L. and Castellanet, C. (2012) *Intervenir dans une région "à l'écart du développement"*. GRET.

MRC (2016) *European food and nutrition security programme in the southern and south-eastern regions of madagascar asara / aina*.

Murray, M.R. (2015) *Rural non-farm economic activities: one of the solutions to the phenomenon of rural exodus*.

Neudert, R. *et al.* (2015) 'Income diversification, wealth, education and well-being in rural south-western Madagascar: Results from the Mahafaly region', *Development Southern Africa*, 32(6), pp. 758-784. Available at: <https://doi.org/10.1080/0376835X.2015.1063982>.

Nirina, H. and Osé, M. (2018) *Les enjeux de la Migration " liée à la sécheresse " dans la Région ANDROY, Sud de MADAGASCAR*. Université Catholique de Louvain.

NOMENJANAHARY, M.A. (2012) *Contribution à l'étude du changement climatique : " Etude de la sécheresse dans le sud de Madagascar et l'utilisation du modèle climatique régionale RegCM4 "*. UNIVERSITÉ D'ANTANANARIVO.

Noromiarilanto, F. *et al.* (2016) 'Assessment of food self-sufficiency in smallholder farming systems of south-western Madagascar using survey and remote sensing data', *Agricultural Systems*, 149, pp. 139-149. Available at: <https://doi.org/10.1016/j.agsy.2016.09.005>.

OCHA, BNGRC and WFP (2018) *Data collection and mapping analysis for the relaunch of the SAP/EWS early warning system*.

IOM (2018) *Migration, environment and climate change: evidence for public policy in Africa and the Indian Ocean*, p. 15.

OMD Madagascar (no date).

ONN (2017) *National Nutrition Action Plan-III 2017-2021*.

ONN & UNICEF (no date) *Evaluation de l'activité de dépistage de la malnutrition aigüe par les mères dans les régions d'Androy et d'Anosy*.

PAM (2014) *Study of the functioning of food markets in southern Madagascar*.

Pascal, B. (2008) *De la "terre des ancêtres" aux territoires des vivants: les enjeux locaux de la gouvernance sur le littoral sud-ouest de madagascar*.

Perrier de la Bathie, H. (1934) 'Les Famines du Sud-Ouest de Madagascar. Causes and Remedies', *Revue de botanique appliquée et d'agriculture coloniale*, 14(151), pp. 173-186. Available at: <https://doi.org/10.3406/jatba.1934.5345>.

Petit, G. (1934) 'La disparition des Opuntia et les famines périodiques dans le Sud de Madagascar', *Bulletin de l'Association de géographes français*, 11(77), pp. 37-39. Available at: <https://doi.org/10.3406/bagf.1934.6841>.

Poirier, J., Randriamarana, D. and Razaramparany, D. (1978) 'Les fady dans la société malgache', p. 18.

PRIMATURE, MINISTERE DE L'INTERIEUR ET DE LA DECENTRALISATION and BUREAU NATIONAL DE GESTION DES RISQUES ET DES CATASTROPHES (2017) *Commission urgence grand sud de madagascar plan de réponse stratégique à la sècheresse prolongée (2016 - 2017)*.

*Profil des moyens d'existence hea (household economy analysis) (2021)*, p. 35.

Rabenitany, H. and Ranaiivoarisoa, L. (2016) *REPORT OF THE FINAL EVALUATION OF THE TECHNICAL ASSISTANCE APPROACH TO THE HEALTH DISTRICTS OF THE PASSOBA PROJECT.*

RADSE (no date) *Final evaluation of the "Promotion of key family practices through regional integrated communication strategies for the survival, development, schooling and protection of children" in the Analanjirofo, Anosy and Atsimo Andrefana Regions of Madagascar.*

Raharinjanahary, L., Hofmann, E. and Randriamahaleo, T. (2006) *Evaluation des actions mises en oeuvre sur la thématique 'genre et eau' du volet développement local du projet Objectif Sud,* p. 69.

Raharison, T., Belieres, J.-F. and Randriamiarana, V. (2018) *The European Union and Madagascar: cooperation that counts,* p. 115.

RAJAOBERISON, A. (2015) *Analyse de la résilience des ménages aux alentours d'une forêt de l'Ecorégion Sud de Madagascar face aux perturbations climatiques et socio-économiques : Cas de la zone périphérique de la Réserve Spéciale Bezà Mahafaly.* UNIVERSITY OF ANTANANARIVO.

RAJOELISON, S.A. (2015) *Conflict diagnostic report: androy region.* PNUD Madagascar.

Rakotoariseheno, R. and Samisoa (2022) *Autonomie des femmes de l'Androy et du Menabe dans le contexte de la migration et de la gestion de conflits,* p. 189.

Rakotomalala, C. (2015) *Perceptions and social and cultural dynamics of stunting in children under two in Ampanihy district.* GRET.

RAKOTOMANANA, F., RANDRIANATOANDRO, Z.T. and RAVELOSOA, J.R. (2018) 'Results of the mid-term evaluation of the fiavota programme'.

Rakotondrainibe, H. (2020) 'Proposition d'actions concrètes pour améliorer l'approvisionnement en eau potable dans l'extrême sud'.

Rakotondrainibe, H. (2022) 'Partage d'expériences sur la maîtrise totale de l'eau avec les communautés de base'.

Ralaingita, M.I. *et al* (2022) 'The Kere of Madagascar: a qualitative exploration of community experiences and perspectives', *Ecology and Society*, 27(1), p. art42. Available at: <https://doi.org/10.5751/ES-12975-270142>.

Ralison, C. *et al* (2003) 'Amélioration de l'alimentation infantile en zones rurales: l'expérience du programme Nutrimad à Madagascar', in. *2ème Atelier international / 2nd International Workshop Voies alimentaires d'amélioration des situations nutritionnelles*, Ouagadougou.

RAMAHANDRY, H. (2019) *Contribution à l'étude de la sécheresse passée et future dans le grand sud de Madagascar avec le logiciel Climate Data Tools (C.D.T.).* UNIVERSITE D'ANTANANARIVO.

Ramaroson, M.N. (2017) *Madagascar's Strategic Programme for Climate Resilience,* p. 37.



Ranaivoson, S. *et al.* (2018) *Challenges, issues and policies: migration, environment and climate change in Madagascar*. Research Report. IOM, p. 172 p. Available at: <https://hal.archives-ouvertes.fr/hal-02321669> (Accessed: 6 March 2022).

Randriamalala, J.R. *et al.* (2016) 'Effects of goat grazing and woody charcoal production on xerophytic thickets of southwestern Madagascar', *Journal of Arid Environments*, 128, pp. 65-72. Available at: <https://doi.org/10.1016/j.jaridenv.2016.01.002>.

Randriambanona, H.A. *et al.* (2015) 'Etude des successions végétales entre deux dates 1997 et 2012 dans la forêt de Mikea (sud-ouest de Madagascar)', in, p. 23.

Randriamiandrisoa, J. and Ballet, J. (2014) 'Household vulnerability to food insecurity and resilience factors: The case of Farafangana district in Madagascar', p. 20.

Randriamiarana, Z. (2017) *Comparative analysis of the socio-economic situation in southern Madagascar*. World Bank.

RANDRIAMPARANY, T.S. (2015) *Perspectives d'amélioration des conditions de vie des femmes Antandroy face à la sécheresse : cas de la commune d'Ambvombe*. UNIVERSITÉ D'ANTANANARIVO.

RANDRIANAIVONAVOLONA, M. (2009) *Malnutrition des enfants a madagascar, analyse approfondie des causes*.

RANDRIANANDRASANA, J.P. (2018) *Étude d'intégration de l'énergie solaire pour l'électrification à madagascar: " cas de la region androy " conception et realisation d'une pompe à eau solaire*. UNIVERSITY OF ANTANANARIVO.

Randrianomanana, M., Ranaivoson, R.E. and Hervé, D. (2015) 'Pluriactivité et gestion de la trésorerie : les capacités d'adaptation face à la protection de la forêt de Mikea sont entre les mains des plus riches', p. 18.

Rarivos, V. (no date) 'Office National de Nutrition', p. 74.

Rasamimanana, N., Ramahatratra, E. and Richard, A. (2016) 'Climate variability and change in Bezà Mahafaly', p. 10.

Rasolofo, P. and Joseph, A. (no date) 'Cellule securite alimentaire de l'union europeenne a madagascar', p. 23.

RASOLOFO, P., RASOLOFOSON-RAJAONAH, L. and RABEMALANTO, N. (2014) *Agrarian diagnosis and seed marketing in the SOA (Structuration des Orientations Agricoles) project area of southern Madagascar*.

Rasolofoniaina (2021) 'Secheresse dans le grand sud : éléments d'analyse de la crise'.

Ratiarson, V., Rafamantanantsoa, F. and Hervé, D. (no date) 'Elaboration d'un modèle de décision pour la création de nouvelles stations d'observation acridienne : cas du sud-ouest de Madagascar', p. 13.



Ravonjimalala, H.R. *et al.* (no date) 'Evolution de la déforestation pour la culture de maïs sur défriche-brûlis dans la forêt de Mikea, avant et après sa mise sous statut d'aire protégée', p. 16.

Razanaka, S. *et al* (2001) 'Sociétés paysannes, transitions agraires et dynamiques écologiques dans le sud-ouest de Madagascar'. Available at: <https://hal.inrae.fr/hal-02829667>.

RAZANAKOTO, G.F.T. (2017) *Analyse de la vulnérabilité à la sécheresse des familles paysannes tandroy* UNIVERSITÉ D'ANTANANARIVO.

RELAHARA, H.R. (2006) *Analyse socio-economique du probleme d'eau dans l'androy (cas du district d'ambovombe androy)*. UNIVERSITÉ DE TOAMASINA.

*Republic of Madagascar Primary Education in Times of Crisis* (2013), p. 84.

République Madagascar (2018) *Regional development plan for the androy region (prd)*. EU & UNDP & FAO & AROPA.

République Madagascar (2021) *Colloque régional régions plan emergence sud madagascar: anosy et androy*.

République Madagascar and AUTORITE NATIONALE DE L'EAU ET DE L'ASSAINISSEMENT (2003) *Schema directeur de mise en valeur des ressources en eau du grand sud de madagascar*, p. 224.

Rijalalaina, M.R. (2020) *Impacts de la secheresse dans le sud de Madagascar, cas de la région androy*.

RINDRA CONSULTING (2021) *Institutional analysis in the districts of ampanihy (atsimo andrefana), beloha and tsihombe (androy)*.

RUKEZAMIHETO, A. and PELISSET, A. (2021) *Rapport Final Diagnostic du degré d'inclusivité du consortium MAHARO*.

Ryan, P. and Carter, R. (2016) *Rural eah service delivery in madagascar: a second sustainability audit*.

de Saint Sauveur, A. (1996) 'Le vol de bétail, facteur clef de l'organisation foncière et pastorale dans le pays bara (Sud-Ouest malgache)', *Journal d'agriculture traditionnelle et de botanique appliquée*, 38(2), pp. 253-267. Available at: <https://doi.org/10.3406/jatba.1996.3748>.

Saint Sauveur de , Armelle (2007) 'Le zébu dans le sud-ouest malgache, gardien des espèces pastoraux et des territoires ancestraux = The zebu in south-western Madagascar, guardian of wild areas and ancestral territories', in: *Dounias Edmond (ed.), Motte Florac E. (ed.), Dunham M. (ed.). Le symbolisme des animaux : l'animal, clef de voûte de la relation entre l'homme et la nature = Animal symbolism: animals, keystone in the relationship between man and nature*. IRD Éditions (Colloques et Séminaires), pp. 1047-1066.

Salame, A. (no date) 'L'offre d'éducation scolaire dans la region androy', p. 8.

SAMBO, M. (2016) *Analysis of "kere" in the androy region*.

SAMISOA (2016) *Regional disparities and environmental degradation in Madagascar: the case of the southern Tandroy population*. UNIVERSITE D'ANTANANARIVO.

Seeling, A. (2006) 'Rapport d'activité Objectif Sud 2005 Volet développement local'.

Shapiro, B. *et al* (2007) *Nourishing the Land, Nourishing the People*, p. 243.

SOJA TSIMANDILATSE, L. (2007) *Les obstacles au développement dans le sud: cas de l'androy*. UNIVERRSITE FIANARANTSOA.

Tengö, M. and Heland, J.V. (2011) 'Adaptive capacity of local indigenous institutions: the case of the taboo forests of southern Madagascar', in E. Boyd and C. Folke (eds) *Adapting Institutions*. Cambridge: Cambridge University Press, pp. 37-74. Available at: <https://doi.org/10.1017/CBO9781139017237.006>.

Thierry, B. and Leguevel, S. (2007) *L'irrigation dans le Haut Bassin du Mandrare 12 années d'intervention au PHBM (1996-2008)*.

Thouillot, F. and Maharetse, J. (2010) 'L'appui au stockage des récoltes Une solution pour la sécurité alimentaire dans les zones agricoles difficiles? L'exemple du Grand Sud de Madagascar', *Éditions du Gret* [Preprint].

Trousselle, A., Dijoux, M.J. and Cortes, G. (2021) *Migrations, circular mobilities and governance of marine and coastal resources in the Menabe region (Madagascar)*, p. 99.

Tucker, B. *et al*. (2011) 'When the Wealthy Are Poor: Poverty Explanations and Local Perspectives in Southwestern Madagascar', *American Anthropologist*, 113(2), pp. 291-305. Available at: <https://doi.org/10.1111/j.1548-1433.2011.01331.x>.

EU (2017) *Action document for the programme to support the financing of agriculture and inclusive value chains in southern Madagascar (AFAFI-Sud)*.

UE (no date) *AINA Programme Integrated Actions in Nutrition and Food*.

UNICEF (2011) *The South: a graveyard of projects*, p. 47.

UNICEF (2015) *Using Social Norms Theory to Strengthen CLTS in Southern Madagascar*.

UNICEF (2016) *Evaluation des profils des enfants malnutris dans la région androy anosy*.

UNICEF (2018) *Socio-Cultural Insights for Social and Behaviour Change Campaigns on Exclusive Breastfeeding, Infant Vaccination, Handwashing and Drinking Clean Water in Madagascar*.

UNICEF (2020) *Étude sur les Abus et Exploitation Sexuels des Enfants en Ligne (AESEL) conducted in 6 cities in Madagascar: Antananarivo, Nosy Be, Mahajanga, Toamasina, Toliara, Taolagnaro*.

UNICEF (2021) *Collection of quantitative and qualitative data to improve family health*.

UNICEF (2022a) 'Bulletin alter sécheresse 26-36'.

UNICEF (2022b) 'Drought Alert Bulletin No. 37'.

UNICEF and CLEAR-AA (2021) *Synthèse des évaluations à Madagascar: une ressource pour l'Examen national volontaire de Madagascar*. UNICEF.

USAID and CRS (2018a) *Flourishing gardeners: simple pump changes families' lives*.

USAID and CRS (2018b) *Sand dune stabilization protects homes, farmland, and natural resources*.

USAID CRS (2021) *Restitution of Maharo project gender analysis*. USAID CRS.

USAID and CRS (no date) *Réservoir d'Eau Enterré Plein de Sable (REEPS) Technology*:

Violas, D. *et al* (2018) *Document de capitalisation sur l'expérience des blocs agroécologiques*.

Violas, D. and Lhérieau, F. (2021) *Stratégie de développement de l'agroécologie dans le Grand sud malgache: retour d'expériences autour des blocs agroécologiques*. Nogent sur Marne Cedex: GRET (Cahier projet).

van der Wal, S. (2019) *Child labour in Madagascar's mica sector Impacts of the mica supply chain on children's rights from Malagasy mine to international product line*. UNICEF & terres des hommes.

WHH (2009) *Uadel atsimo atsinanana. Final technical report*.

World Bank Group (2015) *Madagascar: Systematic Country Diagnostic*. World Bank. Available at: <https://doi.org/10.1596/23113>.

WWF (2010) *Testimonies from Madagascar Climate change and rural lifestyles*.

WWF (2011) *First phase of the strategic study on the development of the agrofuel sector in Madagascar*.

# Table of contents

- Contributions to the CapSud study ..... 4
- Introduction: The thwarted development of southern Madagascar ..... 5
- 1. Identifying, referencing, classifying and summarising literature ..... 10
  - 1.1. Identify existing literature on development policies and projects in the south of Madagascar  
10
    - 1.1.1. Searching for documents ..... 10
    - 1.1.2. Selecting the most relevant resources for the literature review ..... 11
  - 1.2. Synthesising the literature ..... 12
  - 1.3. Reference, classify and archive existing literature ..... 13
- 2. Thematic analysis ..... 16
  - 2.1. Water resources ..... 16
  - 2.2. Agriculture, livestock farming, fishing ..... 27
  - 2.3 Environment and climate change ..... 34
  - 2.4. Food and nutritional security ..... 42
- 3. Cross-cutting analysis: Perspectives on aid governance ..... 54
  - 3.1 Dealing with the pitfalls of project logic ..... 54
  - 3.2 Understanding "beneficiaries": the contribution of socio-anthropology ..... 59
  - 3.3. Taking gender issues into account ..... 64
- Conclusion: Pursue and deepen the capitalisation dynamic to inform the common strategy of the  
Humanitarian-Development-Peace Nexus ..... 74
- List of bibliographical references included in the Capsud study ..... 79