



## IMPACT BRIEF

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# Madagascar

## Project to Support Development in the Menabe and Melaky Regions (AD2M)

### About the project

**Objective.** The Project to Support Development in the Menabe and Melaky Regions (AD2M) sought to improve the well-being of marginalized farmers facing individual and environmental constraints by implementing a multifaceted programme that combined land titling with improved irrigation infrastructure to increase productivity and reduce farmers' susceptibility to weather and climate shocks.

**Financing.** The total cost of the project was US\$27.2 million, co-financed by IFAD, the European Union, the Millennium Challenge Account, the United Nations Development Programme (UNDP), the Government of Madagascar and beneficiary households.

**Timing.** Project activities spanned eight years between 2007 and 2015. The project was implemented in 19 groups of villages across 5 districts in the 2 regions of Menabe and Melaky in western Madagascar.

## The project's theory of change

The project's theory of change centered on two components: (1) support for local governance and land tenure security, and (2) support for sustainable development of the productive base.

The first component focused on capacity building, functional literacy programmes and information dissemination activities related to **tenure regulations** for farmers and producer organizations. The project developed community land-use maps and agricultural development plans and established 10 land administration offices. Offices delivered trainings for community and regional staff in maintaining land records. In so doing, the project aimed to create a functioning **decentralized land administration system** to sustainably ensure tenure security through the issuance and recording of certificates and fair resolution of land disputes. This effort, coupled with improved natural resource management, was intended to increase farmers' investments in sustainable soil and land management practices.

With the second component, the project built **new irrigation infrastructure** and rehabilitated existing irrigation infrastructure. It hosted workshops and meetings to increase local organizations' capacity to provide relevant services to their members, including water user associations (WUAs) in the irrigation areas. With the new infrastructure and the WUAs' management and regulation of irrigated areas, the project aimed to increase farmers' productivity, particularly with rice. To support the push for productivity, the project implemented **farmer field schools** and other trainings, demonstrations and workshops on the system of rice intensification (SRI), improved rice system (SRA), and new crops and animal products (e.g., onions, fruit juices and jams, honey) to intensify and diversify production. In addition, it offered trainings on sustainable land management practices and broader measures for environmental protection and climate change adaptation.

The project also constructed **additional market infrastructure** (stores, storage facilities, tool-making workshops). The information from trainings on a wide range of crop outputs, coupled with increased market access, would then help farm households achieve more diverse agricultural production and income portfolios.

## Project outreach and outputs

Determining the overall impact of the project requires first understanding whom the project reached and what outputs it generated.

Beneficiary households: **26,000**

Total beneficiaries: **156,000**

WUAs founded or strengthened: **34**

Land certificates issued: **8,840** (covering 7,257 hectares)

Hectares of irrigated land covered: **5,588**

## Project impact

As part of IFAD's Development Effectiveness Framework, AD2M has been subject to a rigorous impact assessment.

### Data and methods

The impact assessment of AD2M used a mixed-methods approach that combines non-experimental statistical methods and qualitative analysis to compare a sample of project beneficiaries with non-beneficiaries. A reliable comparison group for AD2M beneficiaries was constructed using intertemporal geographic information system analysis to replicate the targeting process used to select project participants—a process based mostly on observable

agroecological characteristics. The impact assessment focused on households that benefited from access to certified irrigation land in the Menabe region only. Data collection took place between October and December 2016 and involved the administration of quantitative questionnaires to a sample of 1,986 households (682 beneficiary and 1,304 non-beneficiary households) as well as qualitative surveys in the form of key informant interviews and focus group discussions.

### Key impact estimates



Overall, the impact assessment found meaningful improvements to project beneficiaries' agricultural productivity, as well as to other household welfare indicators.

Annualized rice yields were estimated to be about **27 per cent** higher for beneficiary than for non-beneficiary households, whereas annualized total value of crop production per hectare was estimated to be about **24 per cent** higher for beneficiaries than for non-beneficiaries. Results also show that most of the gains for the farmers in the project communities came from their ability to crop in the second season; beneficiary households were **19 per cent** more likely to cultivate a crop in more than one season.

AD2M also improved access to extension services and trainings. In particular, beneficiary households were 8 per cent more likely to attend any trainings than non-beneficiary households. The project had limited impacts on beneficiaries' adoption of soil and water conservation structures and use of inorganic fertilizer, but beneficiaries were more likely to have applied pesticides and herbicides than were non-beneficiaries.

Qualitative evidence from interviews with farmers and project implementers suggests that incomes increased as a result of the farming practices and irrigation schemes introduced or improved by AD2M. Quantitative data appears to support this finding: beneficiary households owned **25 per cent** more durable assets than non-beneficiary households.

Beneficiaries also worried less about finding food. They were **11 per cent** less likely to have worried about securing enough food for the family in the preceding week compared with non-beneficiaries.

Finally, results on the performance of WUAs show improvements in terms of both timely delivery and quality of water; beneficiary farmers were 15 per cent more likely to get water on time and 26 per cent more likely to receive good-quality, non-brackish water on their plots compared with non-beneficiary farmers.

## About the brief

This brief draws upon the findings of an impact assessment of AD2M in Madagascar, which was conducted by American Institutes for Research (AIR).

The impact assessment report on AD2M is available upon request.

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## Lessons learned

- The value of crop production and rice yields in the primary season were similar between beneficiary and non-beneficiary households, so annual differences were due primarily to beneficiary households' ability to **cultivate a second season**.
- Thus, future projects can explore whether their focus should be on trainings and practices to increase possibilities for second-season cropping or on determining how to **alter trainings and information dissemination** to achieve higher crop production in the primary season.
- Benefits depend on **maintaining and managing irrigation infrastructure**, especially in the medium to long term. Maintaining the resulting increases in crop production throughout the year requires a well-functioning WUA.
- Both quantitative and qualitative results suggest that the ability to generate significant crop production benefits is already compromised by the inability of at least some beneficiary WUAs to manage and maintain the irrigation infrastructure. There is ample opportunity to learn from WUA functioning and performance in both project and non-project areas, in order to **strengthen and improve governance of WUAs** in the second phase of AD2M.

