



RESAMP: Reducing schistosomiasis through aquaculture interventions in Madagascar: a pilot study

Project type

- interdisciplinary pilot project
 cross-sector project
 global health postdoc fellowship

Project duration

September 2021 – February 2023

Research areas involved

- Biomedical sciences
 Social sciences and humanities
 Public health
 Engineering and other sciences

Focus areas

Tropical diseases, agriculture and health, neglected and poverty-related diseases, nutrition

Project team

Name	Organization	Discipline(s)
Dr. Daniela Fusco	Bernhard-Nocht-Institut für Tropenmedizin (BNITM)	Biomedical sciences, public health
Prof. Dr. Rivo Andry Rakotoarivelo	Université de Fianarantsoa	Biomedical sciences, public health
Dr. Tahinamandranto Rasamoelina	Centre d'Infectiologie Charles Mérieux (CICM), Madagascar	Biomedical sciences
Amena Almes Ahmad	Hochschule für Angewandte Wissenschaften (HAW) Hamburg	Public health
Ralf Krumkamp	BNITM	Public health





Narrative Report

RESAMP was composed of a multidisciplinary team built on the operational experience of the French non-profit NGO APDRA Pisciculture Paysanne working for more than twenty years in Madagascar on the improvement of farming methodologies in the country, the Bernhard Nocht Institute of Tropical Medicine (BNITM) working for ten years in Madagascar with a focus in the last three years on schistosomiasis and the Hamburg University of Applied Sciences (HAW), leader in the development of national and international public health strategies. Strong collaborations with the University of Fianarantsoa and the Centre d'Infectiologie Charles Merieux were established to guarantee the proper roll out of the project in the field. Additionally, a side collaboration with the CIRAD and the University of Notre Dame was established in order to widen the multidisciplinary components of the project toward ecological aspects.

The main objective of RESAMP was to generate a proof of concept to establish a new research line aimed at identifying innovative solutions, at the edge of health, environment, agronomy and social sciences for the fight against schistosomiasis. Specifically, the project was built over three distinct Work Packages (WP) that aimed at assessing the feasibility of an aquaculture intervention in the area of Vatomaniry from an agricultural (WP1), epidemiological (WP2) and public health (WP3) perspective.

A strong collaboration between the BNITM and APDRA was established in the field. The BNITM was based in the APDRA office in Vatomaniry where the project coordinator accompanied the BNITM staff in field visits for identification of sampling sites so as staff to be enrolled. Between 19-21 July, 21 Healthcare workers (one physician and 20 paramedics and nurses) were trained on study procedures. Dr Valentina Marchese, together with Aaron Remkes, Ariane Guth, Prof. Rvo Rakotoarivelo and Tahinamandranto Rasamoelina, conceptualized and coordinated the training in the field. The training took place just before the beginning of the recruitment at the end of the assessment phase. Recruitment included door-to-door sample and data collection (WP2) in 42 municipalities of the area of Vatomaniry.

In parallel APDRA (WP1) identified potential areas for the aquaculture intervention, namely Antanambao Mahatsara, Ampasimadinika, Ambalavolo, Amboditavolo, Ifasina 2 and supplied the broodstock fish.

On October 22nd 2022, the first conference on schistosomiasis (CCSM <https://www.bnitm.de/ccsm>) was organized in Antananarivo thanks to different donors including the RESAMP Impact-Booster fund from the Federal Ministry for Economic Cooperation and Development. At this conference two presentations were held to describe RESAMP, its aims and the first results. Moreover, the conference allowed joint meetings among partners and stakeholders to discuss the potential of the aquaculture intervention. Finally, a first meeting with the colleagues from CIRAD and the University of Notre Dame took place leading to the consequent field work for the ecological assessment of the area of Vatomaniry entirely financed through the BMZ Impact-Booster.

Overall, RESAMP has been a successful project with a high impact for the investment. The project went beyond the expected activities, managing to develop additional research questions and scientific collaborations showing great potential for the scientific output of the project.



Three main publications have been already conceptualized with the expectation of first submissions within the end of 2023. RESAMP has been already presented at the DPG 2023 (Aaron Remkes, oral presentation, <https://www.dgi-net.de/event/30th-annual-meeting-of-the-german-society-for-parasitology-dgp-2023/>), at the KIT (<https://kit-kongresse.de/>) and one additional abstract has been submitted for presentation at the ECTMIH (<https://www.ectmih2023.nl/>). Finally, the RESAMP team was actively engaged in non-peer communication contributing to the organization and the panel discussion of the Snack and Talk event organized by the BNITM in occasion of the NTD day on January the 30th in Hamburg. The event reported the attendance of 70 participants from the general population increasing the visibility of the disease, the project and the GLOHRA community among non-peers.

Project photos



Example of data collection in one of the selected households. The Malagasy population opened the doors of their houses to welcome the RESAMP team.

Credit: RESAMP/ Aaron Remkes

A Schistosome intermediate host *Biomphalaria pfeifferi* collected in the Vatomandry area thanks to the collaboration with APDRA, CIRAD and the University of Notre Dame. The BMZ Impact-Booster enabled us to add this ecological part to the project.

Credit: RESAMP/ Aaron Remkes



The certificate ceremony after completing the training to get formally enrolled in the RESAMP field team.

Credit: RESAMP/ Aaron Remkes



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