



**RAAS**



**IRPAA**

**Regional Institute of Appropriate Small-Scale Agriculture**  
**Instituto Regional da Pequena Agropecuária Apropriada**

Caixa postal 21 - 48907-218 Juazeiro - Bahia – Brazil.

Tel. (0xx74) 3611-6481 – Fax: (0xx74) 3611-5385

E-mail: irpaa@irpaa.org Homepage: [www.irpaa.org](http://www.irpaa.org)



**Report on the “Training Course and Experience Exchange on Rainwater Harvesting and Management for Semiarid Regions” between RAAS (Somali Rainwater Harvesting Association) and IRPAA (Regional Institute of Appropriate Small-Scale Agriculture), at the Dom José Rodrigues Training Center, Juazeiro, Bahia State, Brazil, February 6-8, 2024:**

At the request of RAAS, the Somali Rainwater Association, Abdifatah, Hirey, Abukar, Mohamed and Ali, five young men from Somalia, a country of a semiarid climate in Africa, participated in an exchange meeting between February 5 and 8, 2024, to learn about living with the semiarid climate and technologies appropriate to these regions. The workshop and training course was guided by Wermerson, Betinho, Denis and Johann, experts and technicians from IRPAA, the Regional Institute of Appropriate Small-Scale Agriculture.



*Presentation of the participants at the Juazeiro tree*

The **First Day** dedicated to **Nature and Climate** began at the Dom José Rodrigues Training Center of IRPAA, with a

presentation of the participants and conversation in the shade of a Juazeiro tree. Johann, the coordinator of the course, highlighted: "In 2014 IRPAA was introduced to RAAS members at the Rainwater Harvesting and Management Symposium, held in Feira de Santana, Bahia State, Brazil, organized by ABCMAC, the Brazilian Rainwater Catchment and Management Association. Somalia and the Northeast of Brazil have many things in common: especially the experiences of living with the semiarid climate. The Juazeiro tree with its scientific name Ziziphus means a lot to us. It is a cosmopolitan tree found in different tropical semiarid climates as in the Northeast of Brazil and in Somalia, but also in China, Sinai Peninsula or South Africa and serves to explain ties between the two semiarid regions. So, nature shows that we have things in common." After the welcome, we walked the “nature and environmental trail” through the training center.



*A hand-made rain gauge for rainfall measuring, used by the communities*

The members closely visualized the practices used in the region, from the measurement of rainfall in a handmade rain gauge, which facilitates understanding the

irregular climate with one dry and another wet season per year, the production of food and vegetables for families and also the production of animal feed with native and exotic plants. They also learned about various technologies for catching and storing rainwater, both for human consumption and agricultural production (through a trench cistern), in addition to dialoguing about the preservation practices of the caatinga (dry-forest) and the “recaatingamento” (recovering of the caatinga biome through reforestation of natural plants).



*Rainwater filtered by a traditional charcoal and sand filter*

In the afternoon, the specific characteristics of semiarid climates were studied collectively, showing the rainfall regimes and understanding that in different semiarid countries there are also similar climatic conditions, thus strengthening the importance of knowing and valuing its specific characteristics of rainy and dry seasons, irregularity of rainfall, high evaporation rate, the necessity to catch the rain in the rainy season to use the water in the dry period, respecting and putting into practice the lessons learned over the years. The obstacle/challenge of the different languages (Somali and Portuguese) we overcome through the English language (with the translation made by Beth Szilassy) and, above all, with the use of posters, drawings of the water workbook (A busca

da água no Sertão) and animated demonstrations (such as the gestures imitating the "water cycle"), involving everyone, dialoguing through participatory methods suggested by Paulo Freire, a world-famous Brazilian educator.



*Demonstration of the Water Cycle with gestures*



*Using posters and drawings for explanation (water in crystalline subsoil, model of a cistern)*

On the **Second Day** we travelled 200 km by car, **visiting several Juazeiro rural communities**. First, we visited the community of Lagoa do Meio, in the region of Massaroca. The course participants interacted with the families who carry out projects of co-existence with semiarid climate conditions. The visit was guided by farmer Ms. Ana Lúcia Silva, who explained details about the women's organization and the struggle for the recognition of the area as a Traditional Community of Common Pasture Land.

Ms. Josimeire Serafim explained the transformations that took place after the

implementation of the rainwater cistern beside her house, which provides water for drinking and cooking. In front of the cistern, she explained the whole process to the Somalis: "The water that supplies this cistern comes from the rain. It is captured by the house roof, passes through the gutter, the water is filtered in a pre-filter at the entrance, storing clean water in the cistern. There it is available to the family during the dry season, taken by a clean bucket, hung besides the cistern, and is consumed without the need to use chlorine; more importantly, without having to resort to refueling of the cistern through the water truck" (For more details please download and consult the booklet: ASA, Step by step guide for the construction of 16 thousand liters plates cisterns) On this hot day, we quenched our thirst from this cistern full of clean and fresh water. For the Somalis, this was a highlight of the experience, as they were not familiar with a drinking water cistern program in their country.



*Drinking water stored in Mrs. Josimeire's cistern*

At our next visit, we saw a cistern for agricultural production and the use of water for the cultivation of vegetables, which are used to feed the family and providing a surplus that is shared with other families of the community as well as sold in nearby markets, improving the family's income. In addition, they also had the opportunity to see the trench cistern of Mr. Mauri Silva. They also visited a collective stone tank

and goat and sheep raising.

Mauri lived in the 2000 km distant metropole of São Paulo for 30 years, even learning some English there and could communicate in this language with the Somalis: "Eight years ago I returned from



*Dialoguing with Mr. Mauri and Mrs. Ana Lucia.*

the big city because the life here in my place of origin has improved through living in harmony with the semiarid climate, here where today I am taking care of my Boer sheep. People don't leave to São Paulo anymore like they used to; some are returning from São Paulo to the Northeast," said Mauri. This is a very important aspect for the Somali participants, because in their country many young people emigrate or want to emigrate to the capital Mogadishu, or even to Europe.



*Four meters deep trench cistern of Mauri with water for sheep and goats*

At lunch, they observed the umbu tree (*Spatodia tuberosa*), which stores water in its potato-roots and learned about the

processing of its fruits to jam and juice, an activity that is led by the women of the community and sold at the roadside shop, managed by the community association of Massaroca village, along the main highway to Salvador, the Capital of Bahia State.



*Stone embankments reduce erosion and provide infiltration and recharge of the subsoil*

On the way back to Juazeiro, we visited a second community with the name of Cipó, a traditional community of eight families, who were gathered at the house of their leader Lindomar. They raise mainly goats and sheep. We know of appropriate environmental technologies for limestone subsoil, such as stone embankments that reduce the effects of erosion; as well as providing water infiltration and recharge of underground streamlets. Accompanied by the residents, the Somalis contemplated the communal well called “cacimba” with the centennial gameleira tree (*Ficus gomelleira*), typical for this subsoil, a sacred tree for African descendants in Brazil. Finally, the participants learned about rural sanitation technologies, which collect, treat and reuse gray and black waste water from the houses of the families of the community. Before leaving, we tasted goat's milk sweets, produced by farmer Ms. Ivoneide Batista; she sells the product in the city of Juazeiro, at the roadside shop in Massaroca visited before, and in the community itself.

The **Third Day** dedicated to **Water Management in semiarid regions**, was

held again at the Dom José Rodrigues Training Center. The workshop participants evaluated the previous day's visits and the possibility of applying the acquired knowledge and learning of the experiences to their country of Somalia. Then the participants had the opportunity to delve deeper into water management, with a focus on the five Lines of Struggle for Water (see picture below), the importance of rainwater harvesting and management, and the different appropriate technologies to guarantee water throughout the year for families.

The participants were able to contribute to the debate, despite their affirmation that this method of participatory work and learning was new to them. The common phrase in Brazil "In the semiarid region there is no lack of water, there is a lack of justice", served to raise awareness about access to water and the discussion on water management in a decentralized way. This view could - as said in the discussion - contribute to water management also in semiarid African countries. The successful experiences seen by the participants will serve to disseminate knowledge to new people and partner institutions in Africa.

At the end of the course, there were a moment to evaluate the activities of this exchange. We count on the participation of fifteen students, living as a group at the Training Center and studying at an agricultural school in the city of Juazeiro. The two groups of young people from IRPAA and RAAS came together to share their experiences about each other's way of life and discussed various topics, such as issues related to gender equality and the types of food in each country. Also present were Nívea and Cícero, from the collegiate coordination of IRPAA. The general coordinator, Cícero, pointed out: "Brazil owes a great debt to Africa during the time it was being colonized by Portugal, having brought and enslaved millions of Africans to work in the sugar cane plantations in Brazil.

Therefore, a good part of the country's history was built with the blood of black people and may the course be a small sign of reparation for this injustice."



*Distribution of the Course Certificate*

During the handing over of a certificate to each participant, Abdifatah, the head of the group said: "We are immensely grateful to the IRPAA technicians, students, women of the kitchen, people we met in the communities for this opportunity to learn about water harvesting and living in semiarid climate conditions. The course was very informative in the theoretical classes and in the practical examples, especially in the visit of the communities. We had so many new experiences. We are going to translate the booklet 'The Search for Water in the Sertão (Dry Region)' and make a subsidy in Somali language. We will bring everything we learned to our entity in Somalia, especially to the rural communities." The IRPAA team thanked for what they learned about life in a country and semiarid region of Africa too and expressed their desire that the Somalis would be able to communicate what they saw here in the Semiarid Region of Brazil to the Rainwater Association in Somalia.

Juazeiro, February 9th, 2024

Text of the report: Johann together with Denis and Wermerson

Photos: IRPAA Team

#### **Further literature:**

1. ASA Association of semiarid NGOs (2021) Step by step guide for the construction of sixteen thousand litres plates cisterns, Recife, accessible at: [https://drive.google.com/file/d/1YTL7bfL0\\_8CxB25AMcZc4nkA1dDOZKdE/viw?pli=1](https://drive.google.com/file/d/1YTL7bfL0_8CxB25AMcZc4nkA1dDOZKdE/viw?pli=1)
2. Gnadlinger J (2017) A Busca da água no Sertão, accessible at: <https://u.pcloud.link/publink/show?code=XZ12NI7Z7CxDu1Vd1zfK881XJjc5yrqjJdX>
3. Gnadlinger J (2020) Smart rainwater management and its impacts on drought resilience by Rural Semi-Arid communities: a case study of Northeast Brazil, accessible at: <https://iwaponline.com/ebooks/book/790/chapter/1972739/Smart-rainwater-management-and-its-impacts-on>
4. Heijnen H. (2013). Enhancing economic resilience in North Eastern Brazil by harnessing rain. Rain Foundation, Amsterdam, accessible at: <https://irpaa.org/files/75/enhancing-economic-resilience-in-north-eastern-brazil-by-harnessing-rain>
5. IRPAA (2024) Young people from Somalia get to know experiences of living with the semiarid climate in Juazeiro, Brazil (report in Portuguese), accessible at: <https://irpaa.org/noticias/2658/jovens-da-somalia-conhecem-experiencias-de-convivencia-com-o-semiarido-em-juazeiro>

#### **Participants of RAAS:**

Abdifatah Mohamed Sallal  
Abdullahi Mohanred Abukar  
Anas Said Ali  
Hassan Mohamed Mohamed  
Shuke Abdi Hirey

#### **Participants of IRPAA:**

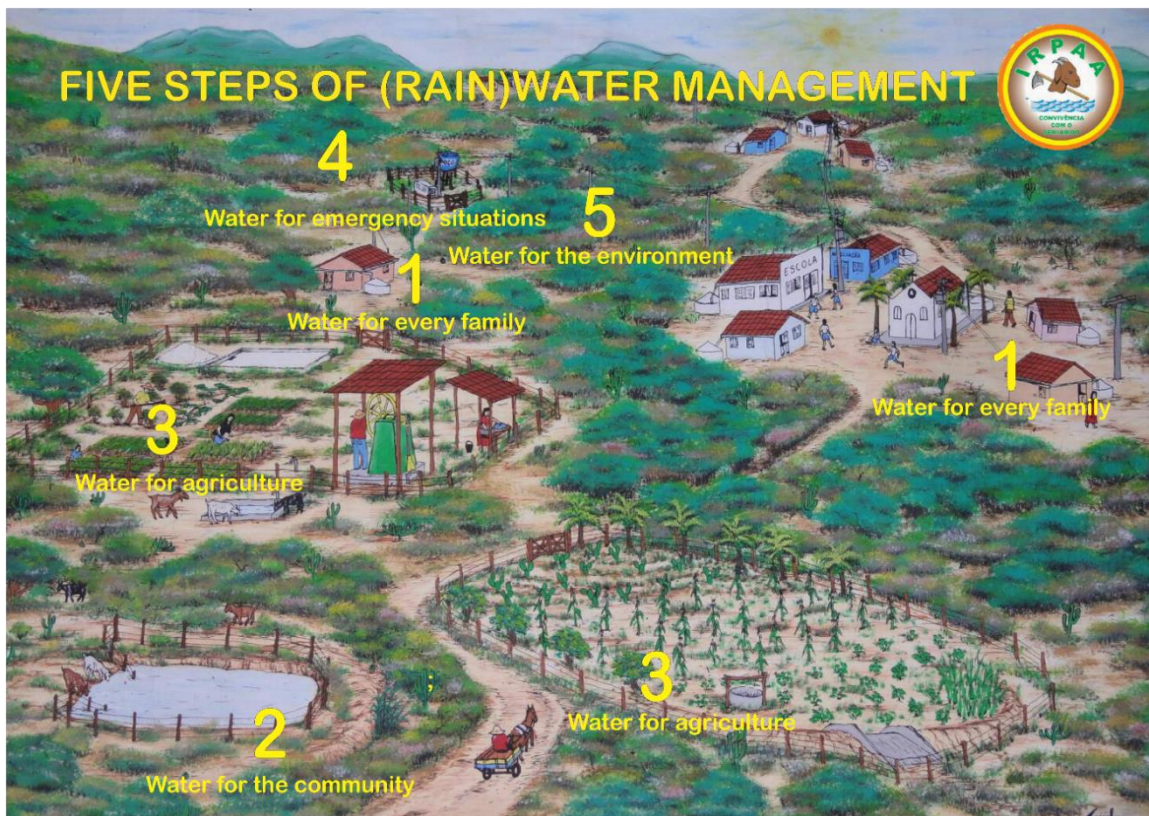
Betinho Manoel Rodrigues Ribeiro  
Denis Vieira dos Santo  
Johann Gnadlinger  
Wermerson Cardoso Silva Matos

#### **Interpreter:**

Elisabeth Szilassy



Course participants at Lagoa do Meio Community in front of a rock cistern with water for goats and sheep



Five steps of rainwater management in semiarid Brazil (see more, downloading the articles of J Gnadlinger)