



# **Rainwater Harvesting in the Amazon**

**Group of Rainwater Utilization  
Research in the Amazon, Sanitation  
and Environment**

**(GPAC AMAZON)**



Amazon (Brazil):

6.5 million households

25 million inhabitants,

Average of 3.9 people per household,

1.7 million households in rural area

4.8 million households in the urban area.

Water supply:

Of the 6.5 million households:

- 3.9 million connected to public supply
- 1.7 million using shallow wells Well or Spring on their Property
- 518 000 are using Wells or Springs Outside of their Property
- 280 000 are using water directly from Rivers, Dams or Lakes
- 27 000 are using rainwater or water distributed by
- 64 000 households were supplied in "Another Way".

**2.6 million households or more than 10 million people without access to safe water supply**



## Rain Water Harvesting

A solution for at least 5 million people in the  
Brazilian Amazon



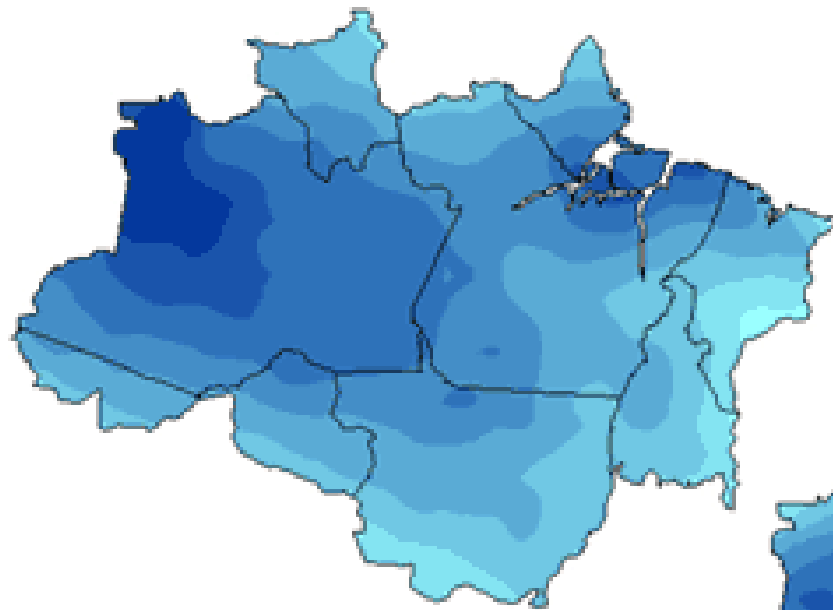
# Housing in the Amazon

**Living on sweet water without safe drinking water**

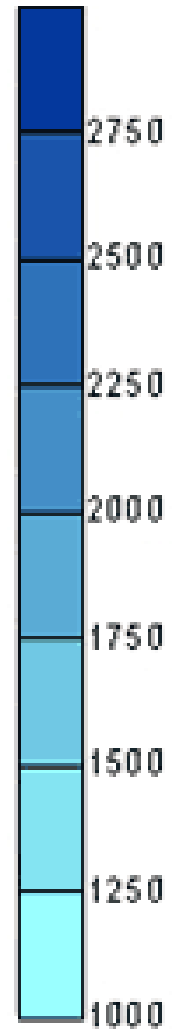
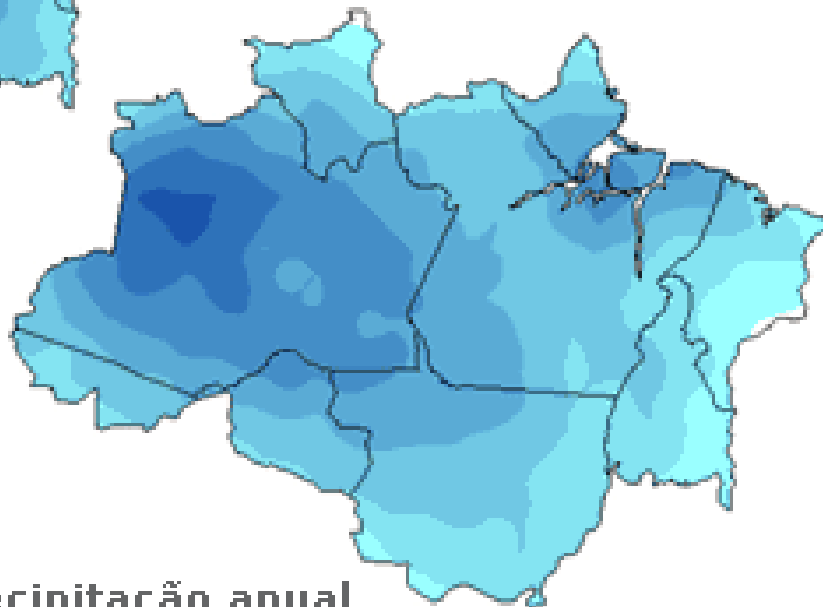


# Rainfall in the Amazon (maximum and minimum per year in mm)

Máxima precipitação anual



Mínima precipitação anual







# RWH Experience in the Amazon

## The PRÓ-CHUVA Program

# PROCHUVA

PROGRAMA DE MELHORIAS SANITÁRIAS DOMICILIARES,  
APROVEITAMENTO E ARMAZENAMENTO DE ÁGUA DE CHUVA



Secretaria de Estado do  
Meio Ambiente e  
Desenvolvimento Sustentável



GOVERNO FEDERAL  
**BRASIL**  
PAÍS RICO É PAÍS SEM POBREZA



# PROCHUVA

PROGRAMA DE MELHORIAS SANITÁRIAS DOMICILIARES,  
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## Beneficiaries from the program I



**15 Municipalities (located  
at the rivers: Solimões,  
Purus, Madeira and  
Amazon)**

**77 communities,  
1,839 households,  
9,413 people.**

### **Criteria for Selection of the Communities:**

**Isolated rural communities, located  
primarily in protected areas of the State  
of Amazonas; and**

**Isolated rural communities subject to  
seasonal droughts.**



# PROCHUVA

PROGRAMA DE MELHORIAS SANITÁRIAS DOMICILIARES,  
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## Beneficiaries from the program II



**10 Municipalities - Purus, Solimões  
and Amazonas**

**2,500 households**

**12,500 people.**

**Value: aprox. 7 Million U\$**

**Criteria for Selection of the Communities:**

**Based on the guiding principles of the  
National Plan *Brazil Without Misery***

**Low-income families, preferably in extreme  
poverty, living in rural areas who do not  
have adequate access to drinking water  
and are listed for Social Programs of the  
Federal Government.**



5 Family System





4 Family System

fotos Karol Khaled



# Description of the RWH System



RW Collector (1)

Upper reservoir (4)

Horizontal conductor (2)

Sand filter (5)

self-cleaning reservoirs (3)

Lower reservoir (6)





## **Installation Costs**

**Between 1.500,00 and 2.500,00 U\$  
depending on the location and the  
number of persons linked to the system**

**17% man power**

**22% the wooden structures**

**61% tubes, tanks and other material**



**Next Project**  
**(CÁRITAS BRASIL)**

**200 RWH Systems for ca. 1000  
persons**

**Location:**

**Delta Islands near Belem, State of  
Pará**

Thank you for your attention