

Mapping Brazilian rivers and water bodies using the SWOT Satellite: challenges and opportunities

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INTRODUCTION

- **National Water and Basic Sanitation Agency (ANA)**
and **University of Brasília (UnB)**

started a technical cooperation to evaluate challenges and opportunities of using **SWOT** to support **water resource management** in Brazil.

- Specialist teams and **PhD** dissertations

OBJECTIVE

- (i) Assessment of the potential of the SWOT sensor in estimating **historical series** of river **streamflows**;
- (ii) Assessment of the potential of the SWOT sensor in estimating **historical series** of reservoir **volumes**;
- (iii) Combined use of **in-situ** and **SWOT** estimates to **improve** hydrological modeling results

RIVERS

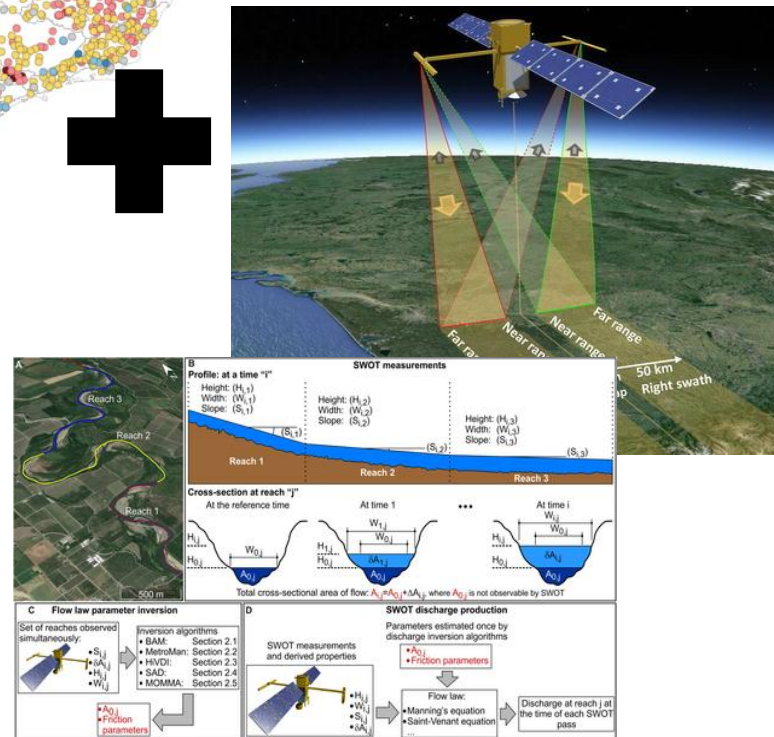
Intermitente até 1m³/s de 1 a 10m³/s de 10 a 100m³/s de 100 a 500m³/s acima de 500m³/s

REGIONALIZATION

(gages + SWOT) streamflows

Gauckler-Manning-Strickle

$$Q_t = \frac{1}{n_t} (\bar{A} + A'_t)^{5/3} W_t^{-2/3} S_t^{1/2}$$

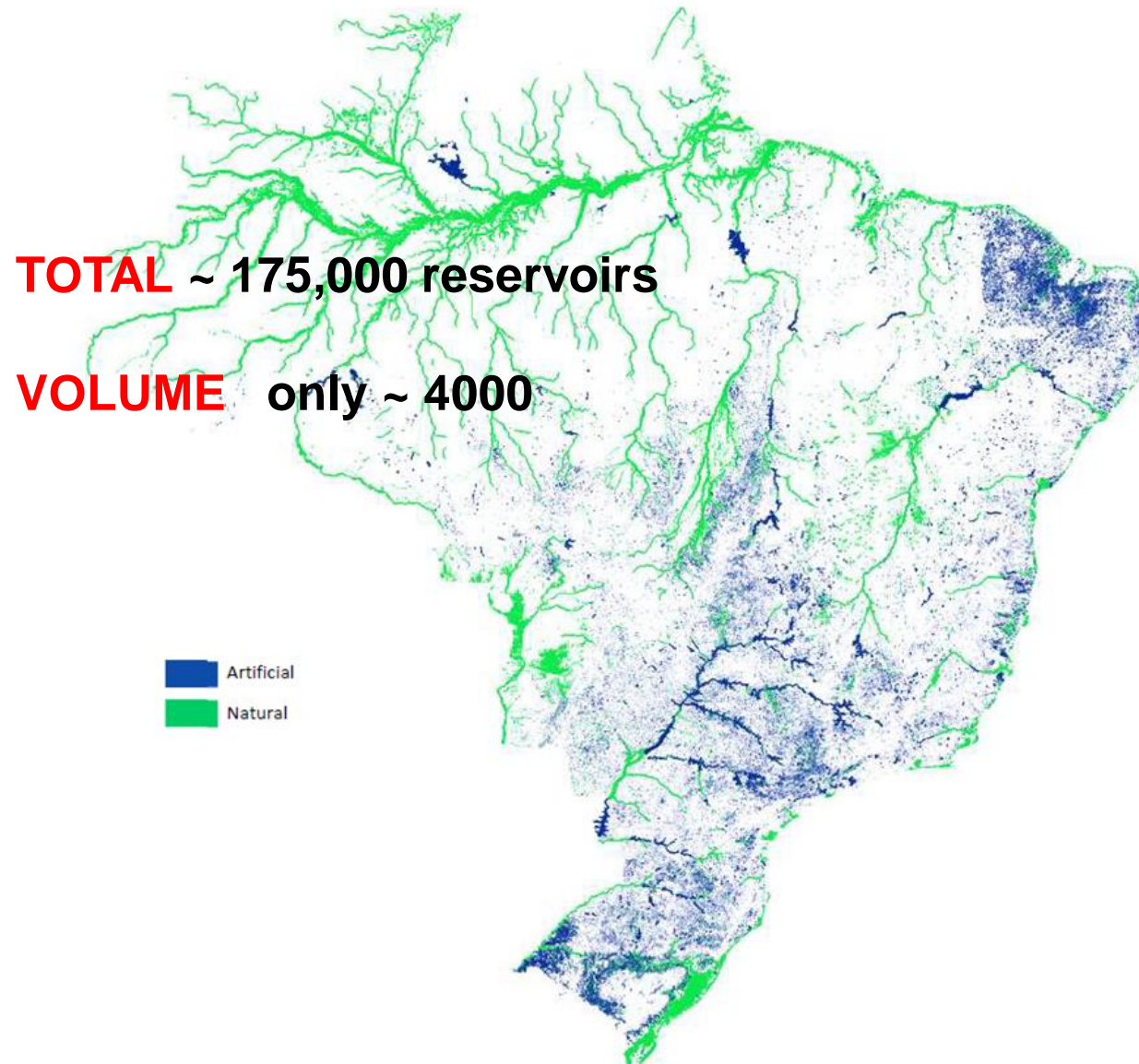


RESERVOIRS

(observed + SWOT) **volumes**

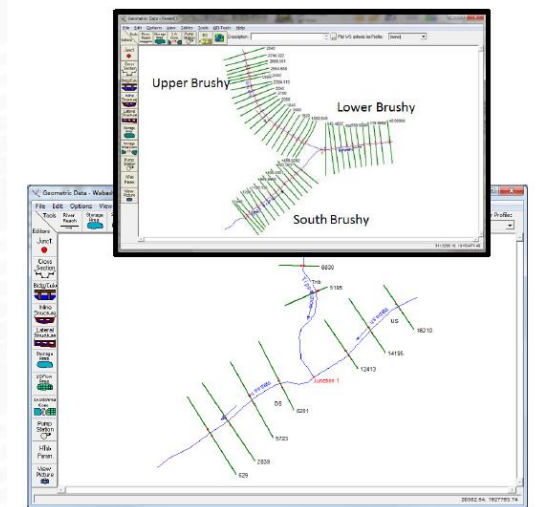
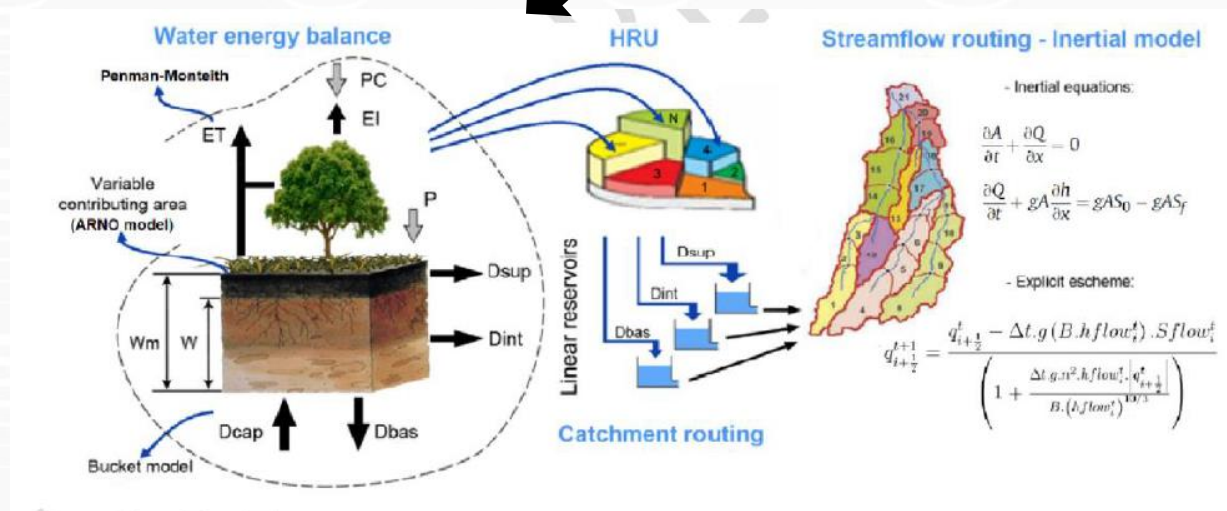
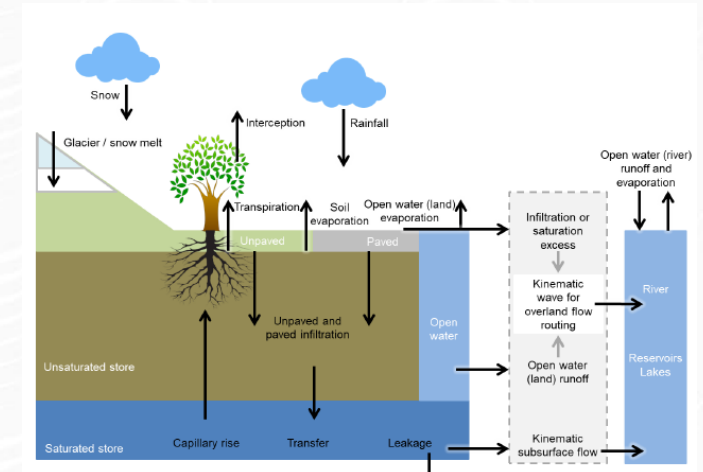
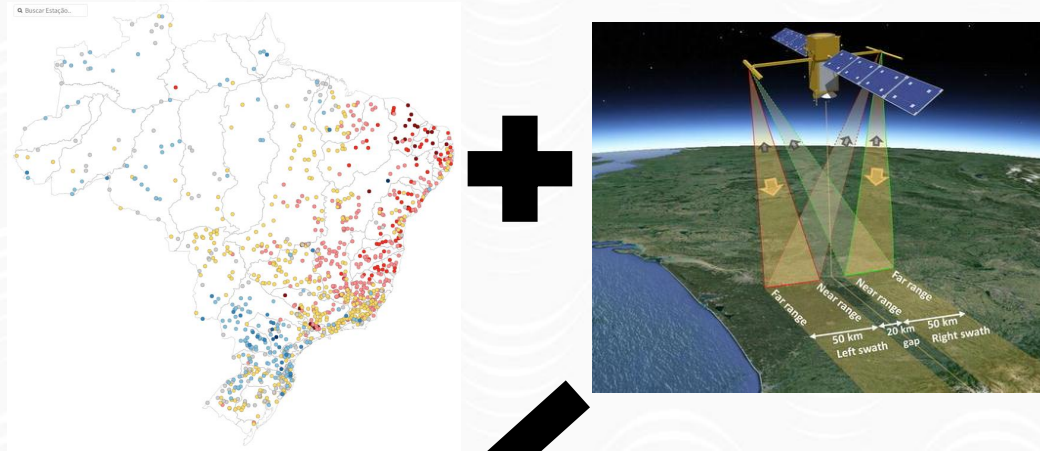


WATER AVAILABILITY
in reservoirs



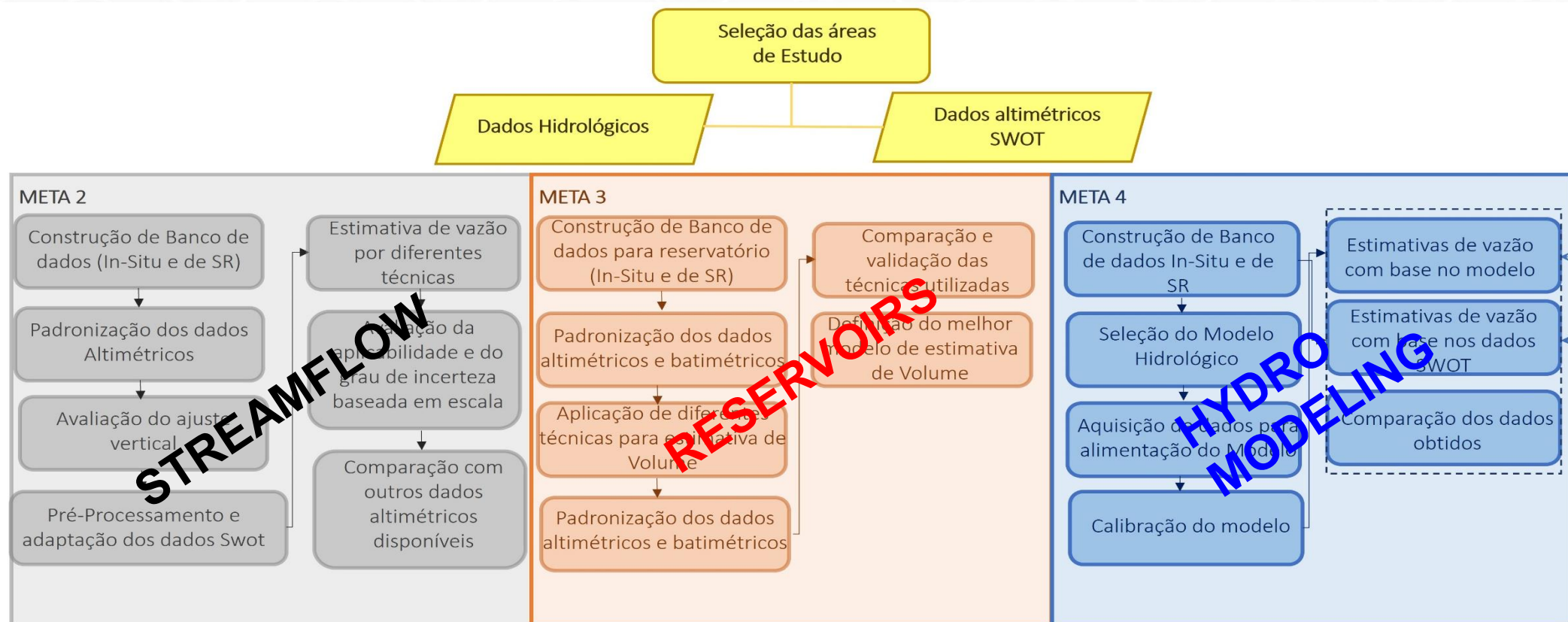
Hydrologic/Hydrodynamic Modeling

Combined use of **in-situ** and **SWOT** data can **improve** hydrological modeling results



FRAMEWORK

- Prepared
- **Cross-Validation** and **Leave-n-out** schemes



#AÁguaÉUmaSó

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MINISTÉRIO DA
INTEGRAÇÃO E DO
DESENVOLVIMENTO
REGIONAL



Thank you!