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Developing arrangements for community management of multiple-use services in Honduras

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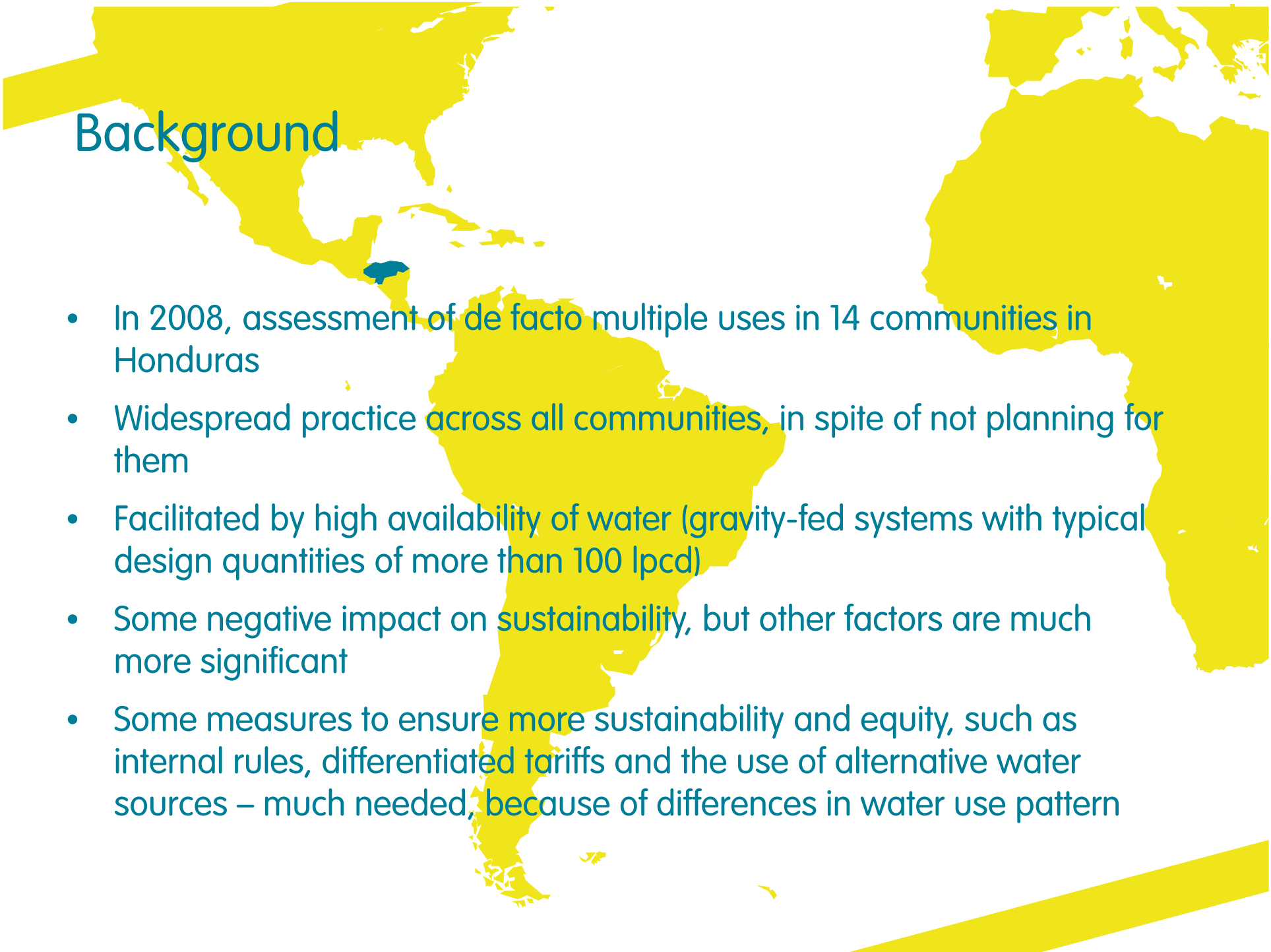
Supporting water sanitation and hygiene services for life

Background



- In 2008, assessment of de facto multiple uses in 14 communities in Honduras
- Widespread practice across all communities, in spite of not planning for them
- Facilitated by high availability of water (gravity-fed systems with typical design quantities of more than 100 lpcd)
- Some negative impact on sustainability, but other factors are much more significant
- Some measures to ensure more sustainability and equity, such as internal rules, differentiated tariffs and the use of alternative water sources – much needed, because of differences in water use pattern

Background

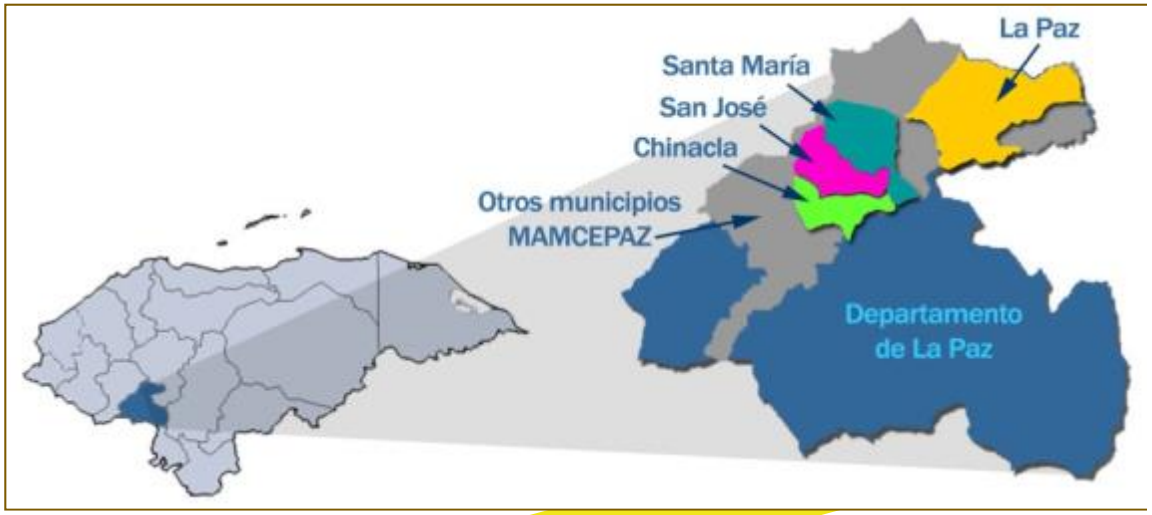
User category	Types of productive use	Median consumption for productive use (l/p/d)	Range of productive consumption from the water supply systems (l/p/d)	Median consumption for productive use from water supply system(l/p/d)
People working outside agriculture	Some small animals and trees	2.7	1-20	2.7
Subsistence farmers	Some animals (chickens, cows, pigs) and a backyard garden	12.3	1-60, with some users > 200	11.0
Small and medium farmers	Farm animals, irrigation of vegetables and backyard gardens, processing coffee	135.0	1-150, but some users > 150	40.3
Big farmers	Crop irrigation and livestock	483.7	0-200	67.3
Cattle ranchers	Water for large number of livestock, pig and poultry farms, fish farms	280.0	20-200	87.5
Businesses	Water for small and medium industries, such as brick making, hotel, and cheese making	82.7	1-125	8.0

Background

- The idea for a MUS pilot project was quickly conceived and approved within the WB funded rural infrastructure programme:
  - WB staff attended the inauguration ceremony of a water supply system in one of the communities
  - They observed that already on the first day the overflow of the distribution tank was used to irrigate potato fields
  - This triggered many question on the future sustainability. Why not develop a MUS system from the onset, to prevent unauthorised and unregulated water use for irrigation>
- In 2011, guideline for the planning and implementation of MUS projects

Context for piloting

- Applied in 8 pilot projects in MAMCEPAZ, an association of municipalities in of the Department of La Paz
- Coffee growing region of Honduras, but also subsistence crops like maize, beans and plantain
- Between 2011-2013, two analyses of 4 of these projects in 4 municipalities
  - (Technical) planning and design
  - Community management arrangements



Design water use

Based on categorization of water users and their typical consumption found in the original assessment

	Wage labourers	Subsistence farmers	Small and medium farmers	Commercial farmers	Cattle ranchers	Businesses	Number of household	Design supply for domestic uses (gppd)	Increase for productive uses (%)
Estimated consumption for productive uses (gppd)	0.71	3.25	35.66	127.78	73.97	21.85			
La Florida	60%	12%	20%	-	-	3%	198	30	22%
Pueblo Viejo y Calaveras I y II	90%	-	10%	-	-	-	195	25	13%
El Granadillo, Laguna Seca y las Huertas	89%	11%	-	-	-	-	198	25	13%
Buenos Aires	68%	-	32%	-	-	-	94	25	38%

Technology and their costs

- All gravity-fed piped supplies with household connections
- In most cases, combining a pre-existing system with a new one, whereby the old one would be for productive use and the new one for domestic
- Where a completely new one was built, for multiple use
- In spite of the increase in design supplies, the costs of the systems didn't increase dramatically
- The increase in costs, compared to if they would be for domestic only, ranged from 0.51% to 15% in the case of Buenos Aires, which had the highest increase in design supply (38%)

Water resources

- Generally, no limitations in terms of natural water availability, but some in terms of access to those
- 2 out of the 4 communities had the intakes close to points where also other communities took water
- 1 community was asked by the neighbour community NOT to apply a MUS approach, out of fear of over-use

- In conclusion:
  - Water resources may appear abundant, but local perception and claims on them may limit
  - Storage

Institutional arrangements

- Using standard community management arrangements, as per the Honduras regulations for rural water supply
  - (Voluntary) water committee
  - Standard statutes and regulations
- But adding specific clauses:
  - Permitting productive uses of water already being done
  - Regulating possible future ones at larger scale, such as the production of bricks or aquaculture
  - Closely related to the tariff setting

Tariffs

- 1 community (Florida) applied a standard flat tarriff, double what they used to have
- 3 communities differential tariffs according to type of productive use
- Reflection local realities and perceptions – but how realistic is its implementations

Type of use	Florida	Pueblo Viejo, Calaveras I y II	Nuevo Paraíso	Los Planes
Domestic	US$ 15/ year	US$ 30/year	US$ 28/year	US$ 18 /year
Start tariff for productive use	-	-	US$ 5 / year	-
Backyard garden	-	-	US$ 0.25 / month	US$ 0.75 / month
Coffee processing	-	US$ 0.25 / bag	US$ 0.04 / bag	US$ 150 / year
Nursery	-	US$ 0.5 / 3000 saplings	US$ 1 / 1000 saplings	US$ 0.5 / 1000 saplings
Cattle and pigs	-	US$ 0.25 / animal	US$ 1 /year / animal	-
Irrigation	-	Price per m2	-	-
Aquaculture ponds	-	-	US$ 1 /pond	-
Block production	-	-	US 5 / saplings	US$ 60 /year
Hotels and restaurants	-	-	-	US$ 1 / month
Car Wash	-	-	-	US$ 5 / month

Conclusion

- Design for multiple uses starts from a (proxy) categorization of users within a community and their typical water use patterns
- This not only defines any modifications to standard designs, but also the need to address sustainability or equity issue through management arrangements
- Many of these were found to have the same bases as the standard ones for rural water supply
- But may need additions, with respect to:
  - Types of uses that are allowed or capped
  - Tariffs for these

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