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Factoring in the costs of (non)sustainability of rural water supply; reflections from case studies in Honduras

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- ▶ “Sustainability support” programme to rural water supply systems
- ▶ Collaboration RASHON – IRC: strengthening capacities for governance over *sustainable WASH* services delivery
- ▶ Recognition of potential negative impact of multiple-use of water sustainability





Study on sustainability of rural water supply

- Objective: *to develop a better understanding of actual practices of multiple use of water and its impacts on the livelihoods of users, as well as on the sustainability of rural water supply services*
- Define implications for:
 - Support to sustainability of rural water supply services
 - Planning and design of new services
- Case studies in 14 communities in Honduras



- All piped water supply systems – one of which with motorised pumping, remainder gravity-fed
- All community-managed rural and small-town water supplies
- None planned for MUS – all domestic water supply systems, de facto used for MUS



User category	Median net income from productive use of water (US\$/family /year)	Importance in families' livelihoods
Labourers	\$ 81	Only home consumption of eggs and chickens. Not real income but expenditure reduction
Subsistence farmer	\$ 111	Home consumption of vegetables, meat, eggs, and basic food crops. Not real income but expenditure reduction.
Small and medium farmer	\$ 696	Production is main source of family income. Some home consumption of basic food crops such as beans and maize.
Large farmer	\$ 5588	Production is main source of family income.
Livestock rancher	\$ 1546	Production is main source of family income.
Entrepreneur	\$ 7423	Production is main source of family income.

User category	Median consumption for productive purposes (l/p/d)	Range of consumption for productive purposes from main water supply system (l/p/d)	Median consumption for productive purposes from main water supply system (l/p/d)	Percentage of interviewees only using alternative sources for productive uses (%)
Labourers	2.7	1-20	2.7	5%
Subsistence farmer	12.3	1-60, but some interviewees > 200	11.0	4%
Small and medium farmer	135.0	1-150, but some 25% of interviewees >150	40.3	7%
Large farmer	483.7	0-200	67.3	31%
Livestock rancher	280.0	20-200	87.5	34%
Entrepreneur	82.7	1-125	8.0	0%



Water systems

- ▶ Small users nearly exclusively use the main water supply system
- ▶ Most systems have capacity to accommodate those
- ▶ Large users have individual sources
- ▶ Only few cases of conflict over water quantity and resources
- ▶ Treatment





- Three different ways of regulating multiple-use:
 - Non-regulation – particularly in smaller and homogeneous communities
 - Basic regulation, e.g. Setting limits to what water can be used for and attempts to volumetric payment. In larger and more heterogeneous communities
 - Prohibition, with difficulty in enforcement

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Table 5: overall sustainability of service

Factors							
Community	General state of infrastructure	Infrastructure: quantity	Infrastructure: water quality	Water resources	Community institutions	Financial management	Overall degree of sustainability
Bella Vista	-	+	-	+	-	-	D
Cancire	-	+	-	+	-	-	D
Chirinos	+	+	+/-	+	+	+	B
Guajiquirito	-	+	-	+	+/-	-	D
Manzaragua	+	+/-	-	+	+/-	-	B
Panuaya	+/-	+/-	+	+	+/-	+/-	B
Paso Alianza	+	+/-	-	+	+	-	B
Quebraditas	+	+/-	+	-	+/-	+/-	A
Río Hondo	+	+	+	+	+	+	A
Santa Ana Yusguare	+	+	-	+	+/-	+/-	B
Santa María	+	+	+	+	+	+	A
Talgua	+	+	-	+	+	+/-	B
Terreritos	+	+	+	+/-	+	+	A

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- ▶ Most systems have mixed performance on sustainability; multiple use is just one out of many factors affecting it
- ▶ In some cases, it can have a negative impact
- ▶ By applying management measures it is possible to accommodate multiple uses without additional infrastructure investment
- ▶ If not, multiple-use can become a bigger problem for sustainability
- ▶ In some cases, requires extra hardware investment
- ▶ Communities need support!





Reflection on implications for costs and benefits

- Benefits – but for whom?
- Attributing benefits to access to water
- Costs of non-sustainability if multiple-use is not addressed
- Costs of “additional” support to community-management





Way forward

- Including awareness on MUS in technicians' curriculum, so they can support communities in addressing MUS
- Planning for MUS from onset, following project cycle:
 - **Assessments**
 - **Priority setting and community selection**
 - Defining options for MUS
 - Not an issue
 - Can easily be accommodated in “conventional” design, with support
 - Requires different approach to hardware
 - Design
 - Implementation
 - Monitoring