

Global Overview of Payments for Watershed Services

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Challenges for effectively taking PWS to a sustainable scale

- Disconnected, small-scale pilot projects
- Lacking information/capacity to design and manage PWS deals
- Lacking institutional support limiting scale up
- Water supply and hydropower conflicts
- Water quality impacts
- Technical uncertainty with cause & effect
- Poverty alleviation
- Same challenges exist for voluntary AND regulatory market schemes around PWS

Ecosystem market framework

- Quality
- Quantity
- Habitat
- Riparian & Wetlands

- Offsets
- Cap & trade
- PWS
- Subsidies

- Sustainable
- Equitable
- Direct partic.
- 3rd parties
- Economic, social & environmental benefits

- Government
- Development
- Property Rights

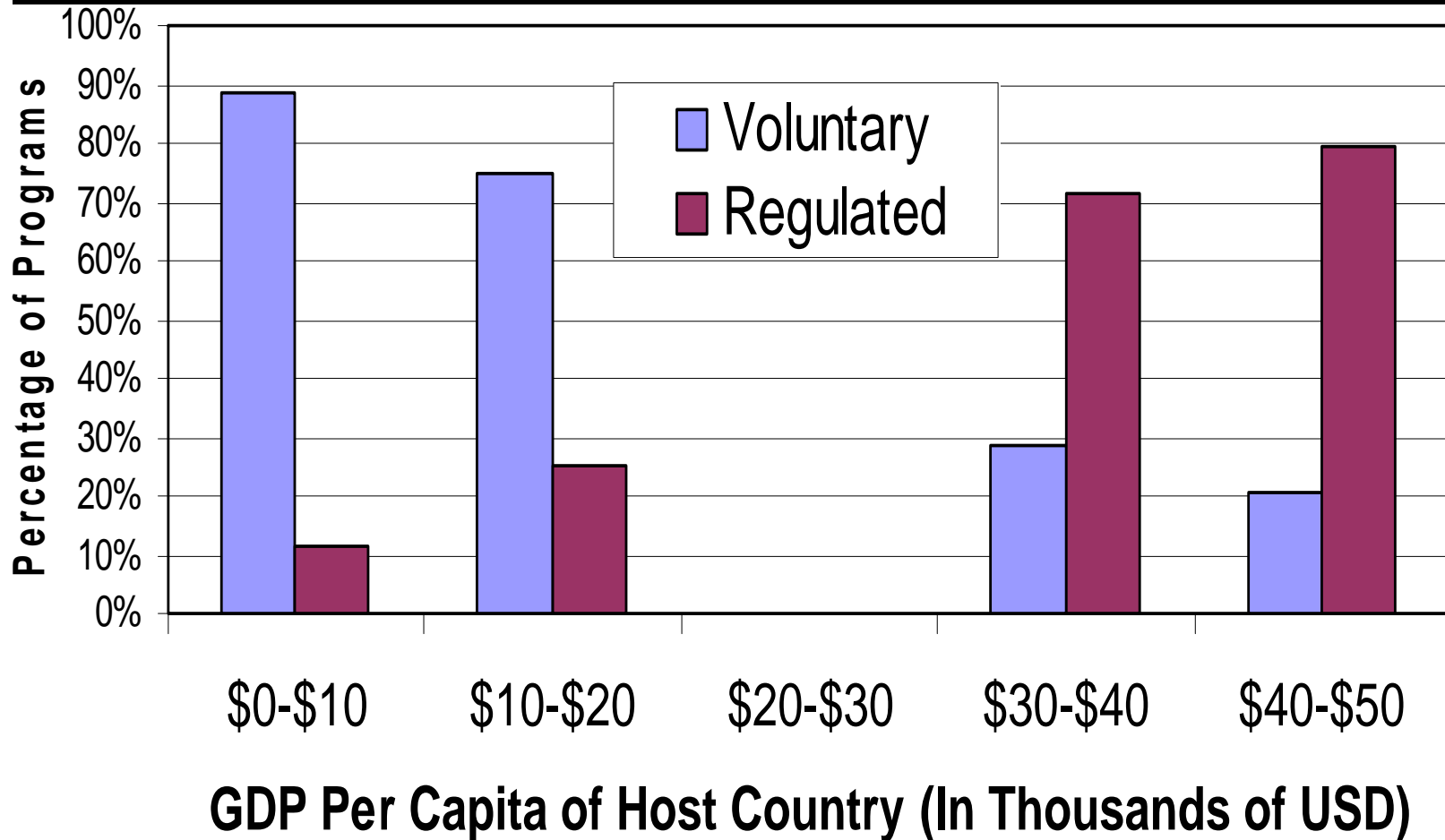
Regulation of commercial activities with environmental implications

Voluntary – Recognizing a market need and issue that affects the public and long-term sustainability, sustainable development, and customer satisfaction

Voluntary vs. regulatory

Program type is often associated with the wealth of host country. Voluntary programs more prevalent in poorer countries while programs with regulatory drivers occur more in wealthy countries *(150 programs examined via WWF Water*

Footprint Group)



Cross-cut program analysis

- Program name
- Description
- Geographic location
- Program type (quality, quantity, habitat, streams/wetland restoration)
- Regulation
- Trading activity
- Trading units
- Geographic scale
- Political and social acceptability
- Hydrological impact
- Scientific credibility
- Potential for growth
- Market participants/shapers
- Developing world impact
- Economic feasibility of implementation

Regulated program examples

Program Name	Description	Program Type	Trading Activity	Trading Units	Scale	Political & Social Acceptab.	Hydrological Impact	Scientific Credibility
<p>NC EEP</p> <p>North Carolina Ecosystems Enhancement Program (USA)</p>	NC public entity serves as a clearinghouse for buying/selling wetlands, stream/buffer mitigation and function credits as in-lieu fee program. NCDOT buys credits in marketplace or creates new wetlands.	Mitigation: Wetlands, Conservation, Streambanks	High	acres of habitat, linear feet (streambank), functional assessment	State	High	Medium	High
<p>Eco-Tax</p> <p>Eco-Tax (Columbia)</p>	Industrial water users pay an "Eco-tax" to landowners implementing water conservation BMPs	Water Quantity, Water Quality	Unknown	Unknown	National	Unknown	Unknown	Unknown
<p>Sugar Beet Co-op</p>	Point-Nonpoint phosphorus trading scheme in Minnesota River. Co-op growers implement cover crops for P credits sold to food processor.	Water Quality	High	P (lbs/yr)	Watershed	Medium	High	Medium
<p>Great Miami WQT</p> <p>Great Miami River Watershed Trading Pilot, Ohio (USA)</p>	Point Source/Non-point phosphorus and nitrogen trading scheme. Seven wastewater treatment plants buy P and N credits created by agricultural BMPs. Reverse auctions by watershed district clearing house keep credit prices low.	Water Quality	High	P & N (lbs/yr)	Watershed	High	High	Medium

Voluntary program examples

Program Name	Description	Program Type	Trading Activity	Trading Units	Scale	Political & Social Acceptab.	Hydrological Impact	Scientific Credibility
<p>ICMS</p> <p>ICMS Ecologico (Brazil)</p>	<p>Fiscal incentive for biodiversity conservation pilot program. Municipal governments compensated for loss of potential tax revenue from the designation of protected areas.</p>	Biodiversity, Conservation	High	Acres, Hectares	State by State within Brazil	Medium	Unknown	Medium
<p>WWF</p> <p>WWF Southeast Rivers & Streams (USA)</p>	<p>\$20 Million Coca Cola grant to WWF for restoration efforts on rivers/streams in southeast U.S.</p>	Water Quality, Biodiversity	None	(non-market)	Regional	High	High	High
<p>Florida Rangelands</p> <p>Florida Ranchland Environmental Services Pilot Project (USA)</p>	<p>5-year PES pilot collaboration between South Florida cattle ranchers, state agencies, USDA-NRCS, researchers and environmental groups. Program will allow ranchers to compete to provide environmental services of water storage, P retention and wetland habitat enhancement in the Northern Everglades ecosystem.</p>	Water Quantity, Water Quality	None	Gallons, lbs P	Watershed	Medium	Medium	High

Voluntary program examples (con't.)

Program Name	Description	Program Type	Trading Activity	Trading Units	Scale	Political & Social Acceptab.	Hydrological Impact	Scientific Credibility
<p>Working for Water</p> <p>Working for Water (South Africa)</p>	<p>Poor are hired to eliminate invasive alien species which use about 7% of S. Africa's reservoir water each year. Service is mostly paid by government, but private users such as landowners, farmers, and foresters have also begun paying. Since 1995, program considered a social and environment.</p>	Water Quantity	High	Unknown	National	High	High	Medium
<p>Working for Wetlands</p> <p>Working for Wetlands (South Africa)</p>	<p>Program works to restore wetlands in South Africa and create jobs through government funded programs. Program funded by the South African Government and Companies required to offset wetlands degradation. (Part of Working for Water program)</p>	Water Quantity, Water Quality, Mitigation: Wetlands	High		National	High	High	Unknown
<p>RUPES</p> <p>Rewarding Upland Poor for Environmental Services (RUPES) (Asia)</p>	<p>PES system for poor areas adapted to rural Asia. Program researches buyers and sellers of ecosystem services. Organization connects service providers to buyers in developing countries (e.g., hydroelectric companies paying for watershed services up stream). Goal is to alleviate poverty through PES schemes.</p>	Water Quality	High	Ecosystem Benefits	Continent	High	Medium	Medium

Voluntary program examples (concluded)

Program Name	Description	Program Type	Trading Activity	Trading Units	Scale	Political & Social Acceptab.	Hydrological Impact	Scientific Credibility
PDAM PDAM (Indonesia)	State-owned water supply company provides in-kind services to local landowners in exchange for practices that sustain clean water.	Water Quantity, Water Quality	Unknown	Unknown	Watershed	Unknown	Unknown	Unknown
Water Loss Init. Water Loss Initiative (Canada)	Nonprofit group creates water quantity offsets by repairing leaks and increasing efficiency in small municipal water systems. Funded by donations and companies wishing to offset their water use. Program acts as broker of water offsets, connecting companies to needy municipalities and providing training and hiring contractors to create offsets.	Water Quantity	High	Liters	National	High	High	Unknown
PASO-LAC PASOLAC (Central America: Nicaragua, El Salvador, Honduras)	"Programme for Sustainable Agriculture on the Hillside of Central America" pays landowners for soil and water conservation practices. Currently funded by government and driven by NGOs. Focus is on downstream water consumers. Goal is to decrease water scarcity.	Water Quantity, Water Quality	High	Hectares	Continental	Medium	Unknown	Low

PWS program tendencies:

- Markets (particularly water) are local (watershed-based)
- Local buyers/sellers
- Local baselines match local requirements and desires
- Shared liability/responsibility
- Local discounting for fate & transport/equivalency/uncertainty
- Adaptive management

Program benefits:

- Compliance flexibility
- New monitoring and innovations
- New sources of funding
- Education

Program considerations:

- Ease of participation
- Accounting for multiple ecological services
- Co-ops and aggregators
- Credit stability (value remains the same over time)

Future needs to scale up:

- Identifying demand
- National/regional protocols for certification
- Accounting (national registry)
- Uniform/standardized exchange ratios at scale
- A marketplace
- Sustainability = demand