

INNOVATION AND TECHNOLOGY TRANSFER

**Case Study: UV Bucket Water Purifier for Rural Areas of Mexico
DM2006 WINNER**



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APPROPRIATE TECHNOLOGY DEFINITION



Definition of appropriate technology

At this point in history, we have two extremes in the technology world:

Micro-scale technologies

Treadle pump



Industrial technologies

Sulfuric-acid sand-filtered drip irrigation



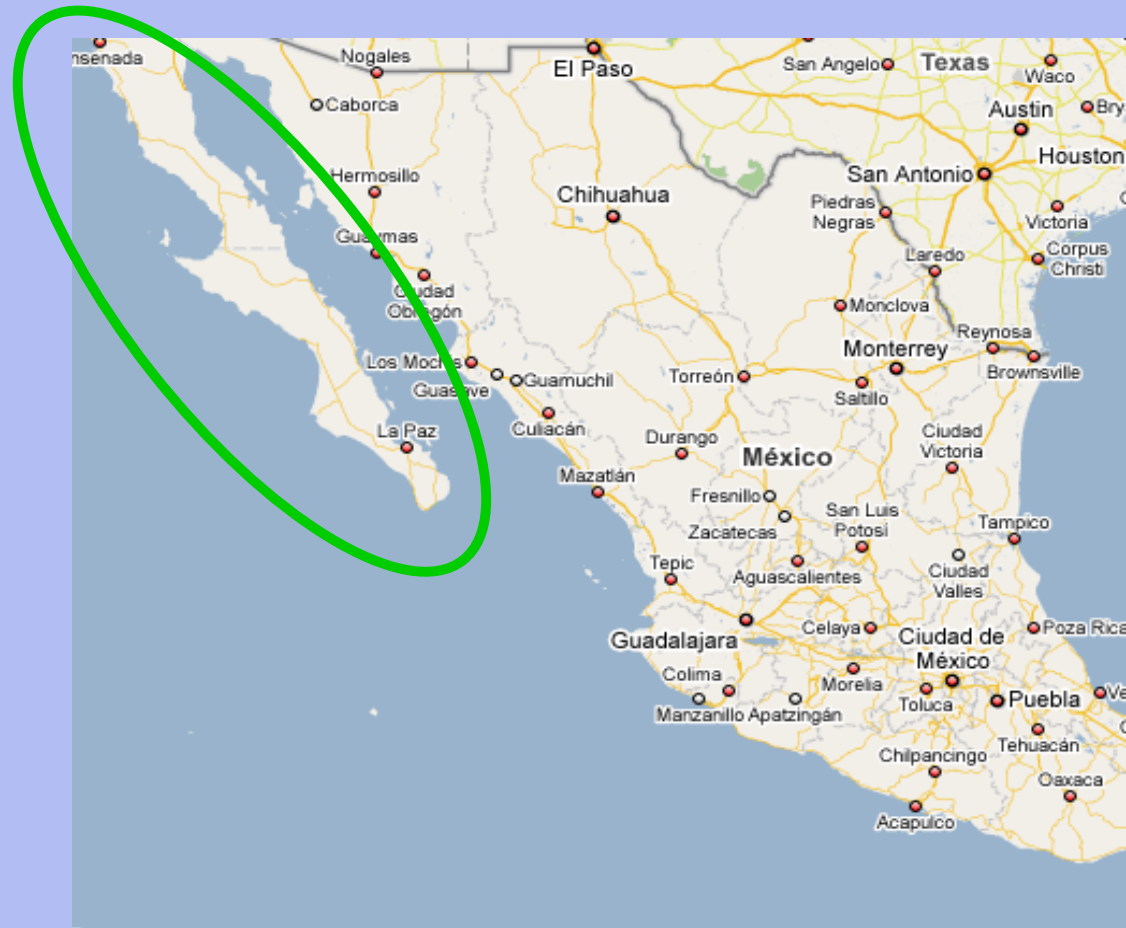


Appropriate technology for regional scale

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The appropriate technology should be in between!

- To produce on a REGIONAL scale
- Advantages are:
 - **Environmentally:** regional production, no long distance shipping
 - **Socially:** fair income distribution between many producers
 - **Economically:** dynamic local economy with small-size regional industries





Appropriate technology for local production

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Supermarket "100% Baja Products"

- Locally-produced products
- Product Rating:



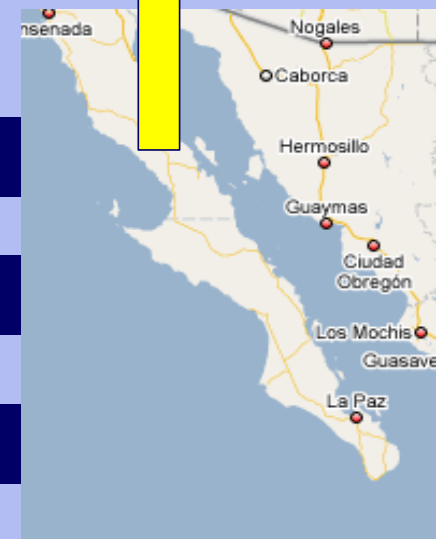
Organic product from LOCAL COMMUNITIES



Organic product from MEXICO



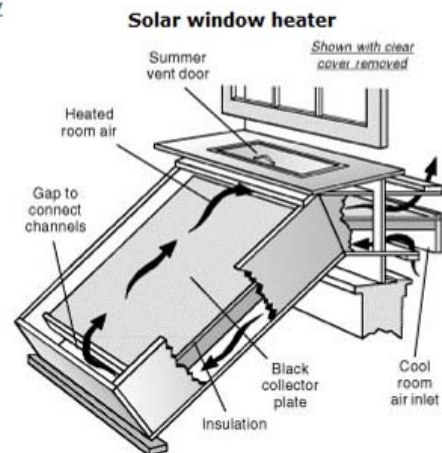
Organic product from THE REST OF THE WORLD



APPROPRIATE TECHNOLOGY DATABASE

Appropriate Technology

- [Instructables: step-by-step collaboration](#)
- [The Solar Cooking Archive](#)
- [Institute for Appropriate Technology](#)
- [Journey To Forever](#)
- [Solutioneer](#)
- [Native Tech](#)
- [The Master Composter](#)
- [How Stuff Works](#)
- [Do It Yourself](#)
- [The Woodbin](#)
- [Tree Guides](#)
- [USDA Plant Hardiness Zone Map](#)
- [Restoration Advice](#)
- [Best Practices Database](#)





Create a worldwide database of all appropriate technologies (wikipedia-type)

- Food dehydrator
- Pumps
- Water purifiers
- Drip irrigation
- Natural wastewater treatment systems
- Solar energy
- Drilling techniques
- Dehydration technologies
- Efficient stoves
- Ecological sanitation

...to create a network of "social inventors"

Find all inventions on:
DM finalists, Ashoka, UN social innovation competition










Database of appropriate technology


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Example of water purifier database and descriptive datasheets

Water purifiers	
UV Bucket	
Filtron	
Mezita Azul	
Lifestraw	
Pur sachet	

UV BUCKET


HOUSEHOLD WATER DISINFECTION



CHARACTERISTICS

Technical

- Uses a UVC lamp
- 110V or 12V electricity
- Purifies 20L in 10 min
- Duration: 3-5 years
- Efficiency: Bacteria 99.999996% (7.6 log)
Virus: 99.997% (log 4.7)



Contact

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PROJECT



<p>Implementation: 3500 UV Buckets distributed in Baja California Sur., Mexico between 2006 and 2008. 500 UV Buckets in poor peri-urban neighborhood and 3000 in rural communities</p>	<p>Monitoring & Evaluation 1500 beneficiaries monitored Adoption rate: rural 73% urban 50% Problems identified: recontamination of the lower bucket when insufficient maintenance</p>
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SCALING-UP

Goal:
5 millions people in Mexico

PARTNERS

COMMUNITY LEVEL	STATE	NATIONAL
<ul style="list-style-type: none"> • Rural teachers (CONAFE) • Rural store owners (DICONSA) • Rural mayors 	<ul style="list-style-type: none"> • Governor of Baja California Sur • State Water Commission 	<ul style="list-style-type: none"> • Ministry of education (SEP) • Ministry of Health (SSA) • OPORTUNIDADES • National Water Commission

1. Allow organizations to communicate through AT network

- ask for help with a particular technology
- compare different technologies
- share experience with one technology
- debate within subgroups: solar energy group...

2. Promote local decision-making

- With AT database/catalog, NGOs, government officials or community members can learn about existing technologies and organize pilot testing

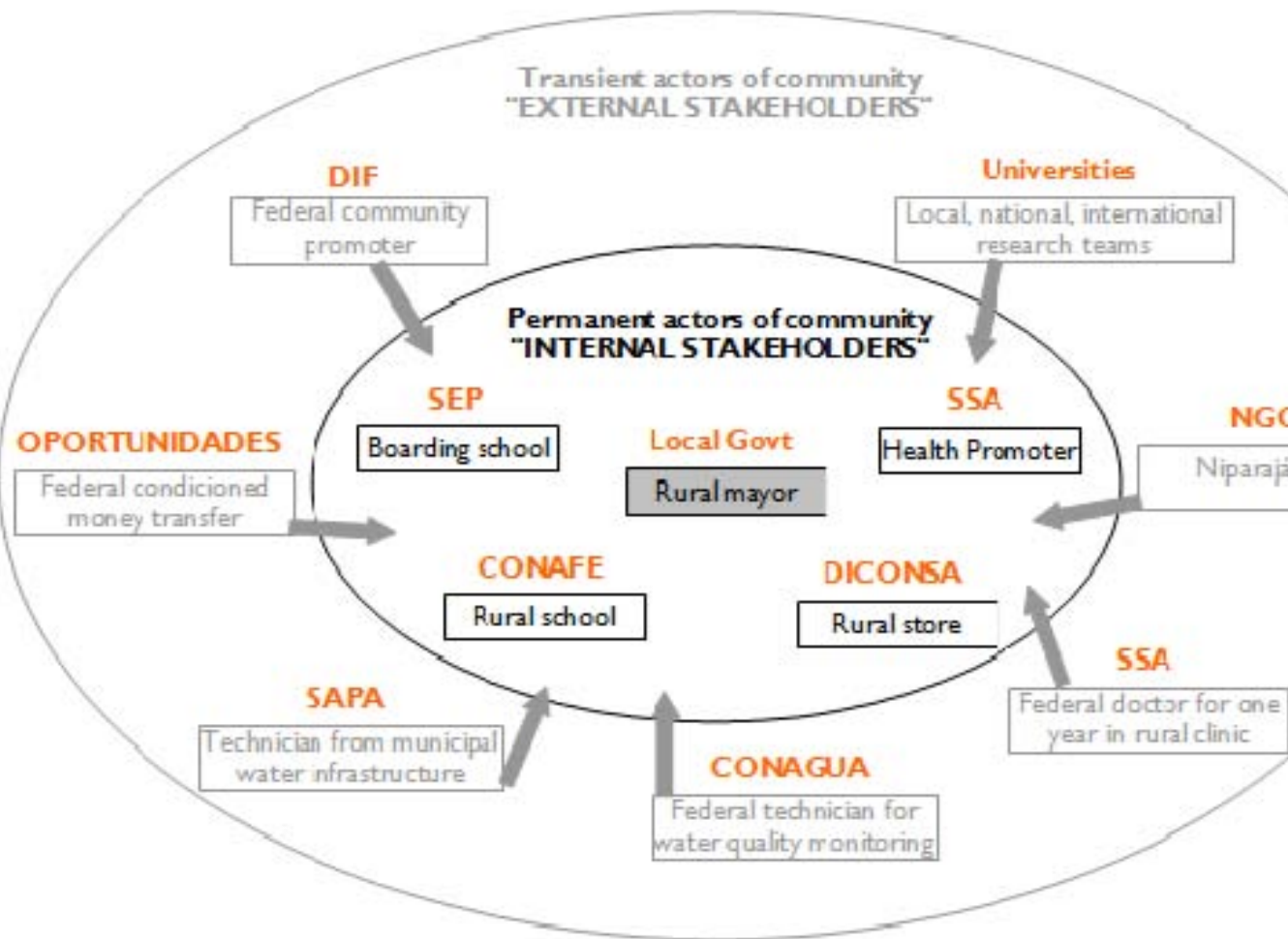
APPROPRIATE TECHNOLOGY TRANSFER



Technology transfer is
meaningless without
monitoring and
IMPROVEMENT



FIG. 2: MAP OF RURAL COMMUNITY STAKEHOLDERS IN MEXICO



**Permanent actors of community
"INTERNAL STAKEHOLDERS"**

The internal stakeholders are the rural community members that live in the community and additionally play a role in it, as a rural teacher, as a rural store owner, or a health promoter. They are our principal collaborators because when knowledge is transferred to them, it stays in the community and can be absorbed over time. As a communication strategy, we strongly believe in empowering the "internal stakeholders" of the community through training, co-participation in the distribution of technologies (pilot micro-franchise), and in the monitoring and evaluation of the appropriation of the technologies.

**Transient actors of community
"EXTERNAL STAKEHOLDERS"**

The external stakeholders are composed of promoters, researchers, doctors, NGO personnel and other water technicians that spend a determined amount of time in the community, ranging from a few hours in the case of the water technician to a year in the case of the rural doctor. They are not community members although they can develop strong ties with the families through their work in the community. Their role is to infuse knowledge to the internal stakeholders, which in turn will over-time, with their own words, culture, timing and local intelligence permeate that knowledge to the entire community.

APPROPRIATE TECHNOLOGY SCALING-UP





Scaling-up of appropriate technology

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Government partnering as a key strategy for scaling-up

- Present project early on, to **ALL** relevant **Government Institutions**
- **Involve Government Actors** in implementation of project
- **Share progress reports** with successes and failures, lessons learned, solutions, to educate government
- Propose realistic **action plan** for the participation of the government in the **scaling-up**



APPROPRIATE TECHNOLOGY INSTITUTE





Space of dialogue between poor populations from developing countries and technology experts from developed countries:

- jointly design technological solutions for the local needs
- fellowships for poor people from rural areas to come to Institute
- income derived from sales of technologies/products invented at Institute
- Network of institutes in each region of the developing world



IAT would revert the brain drain from developing countries...

THANK YOU!

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