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How condominiumial sewerage promoted network connectivity in Honduras and Nicaragua

Sergio Pérez León
SDC –Swiss Agency for Development and Cooperation

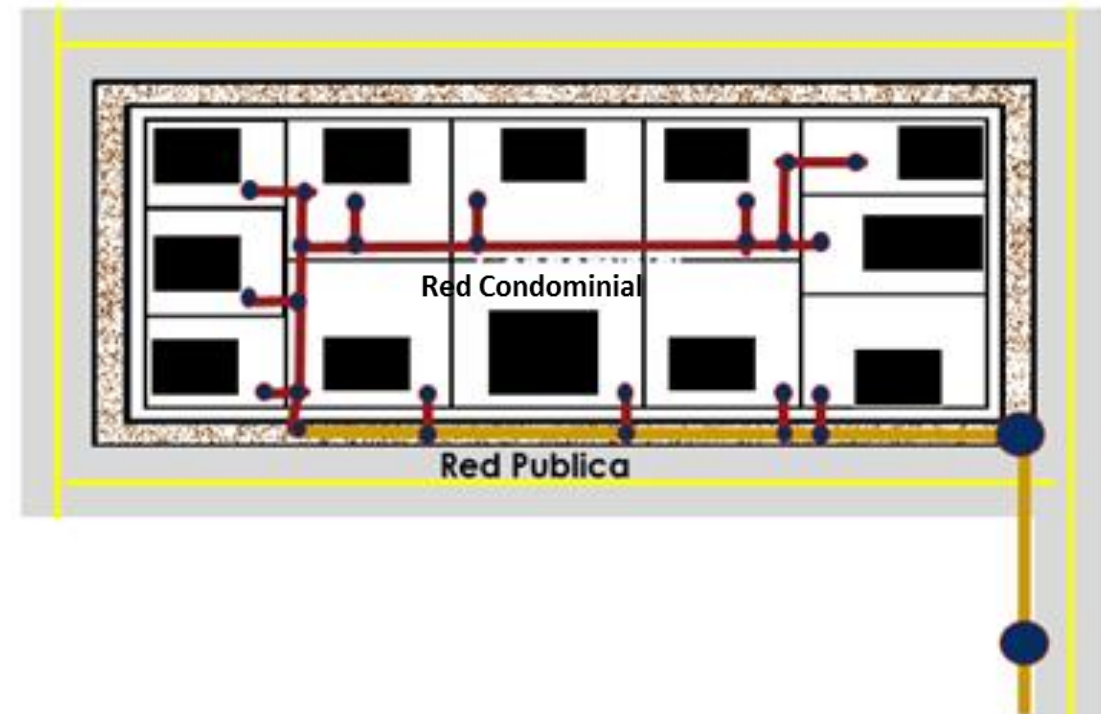
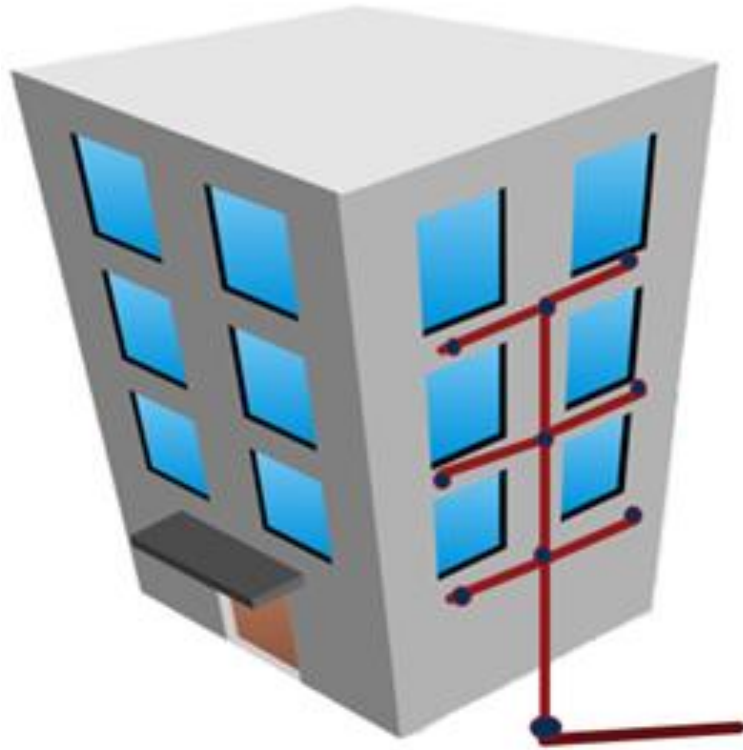


Stockholm, August 29, 2017
Stockholm International Water Week

Before and after

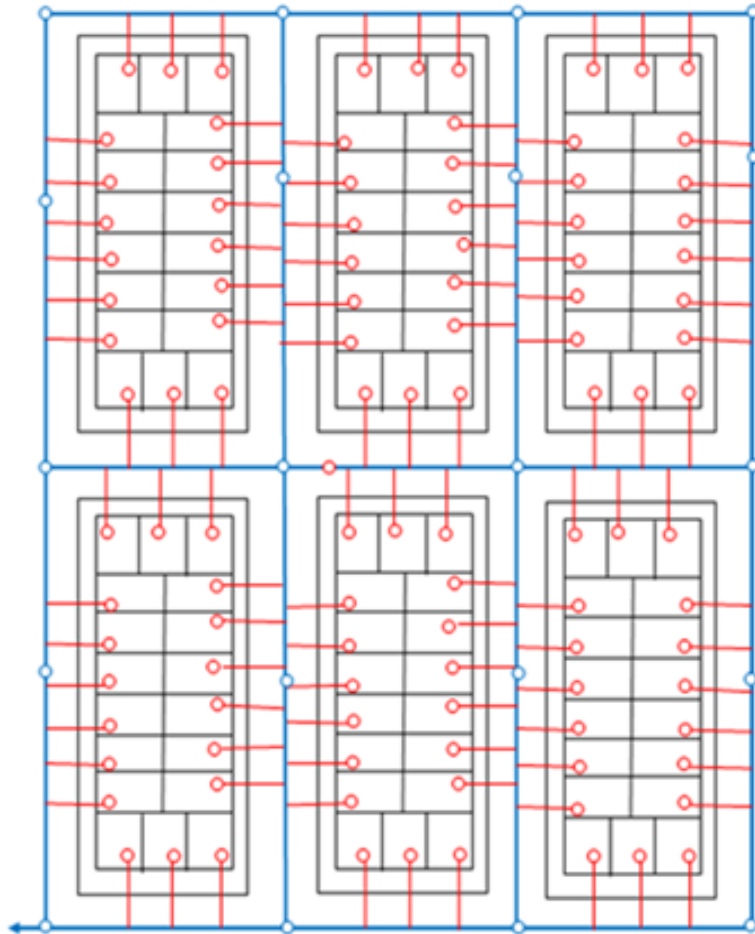


THE CONDOMINIAL SEWERAGE CONCEPT (SIMPLIFIED SEWERAGE)

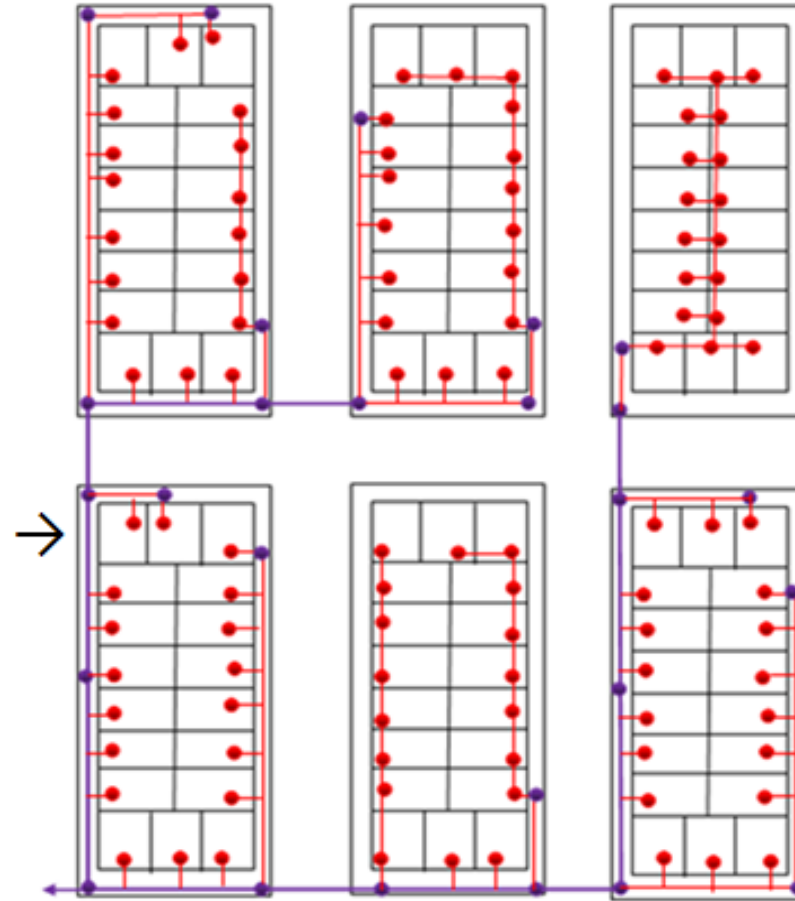


CONDOMINIAL SYSTEMS: CONVEYANCE NETWORK

Dramatic reduction of length of public network



Conventional sewerage network



Condominial sewerage network
(and types of branches)

Problems to overcome to achieve connectivity



CONVENTIONAL SEWERAGE vs. CONDOMINIAL SEWERAGE

Problems with Conventional Sewerage

- Costly investments
- Heavy infrastructure
- Population not participating in the project
- No consideration of internal installations
- Low results in connectivity
- Low sustainability

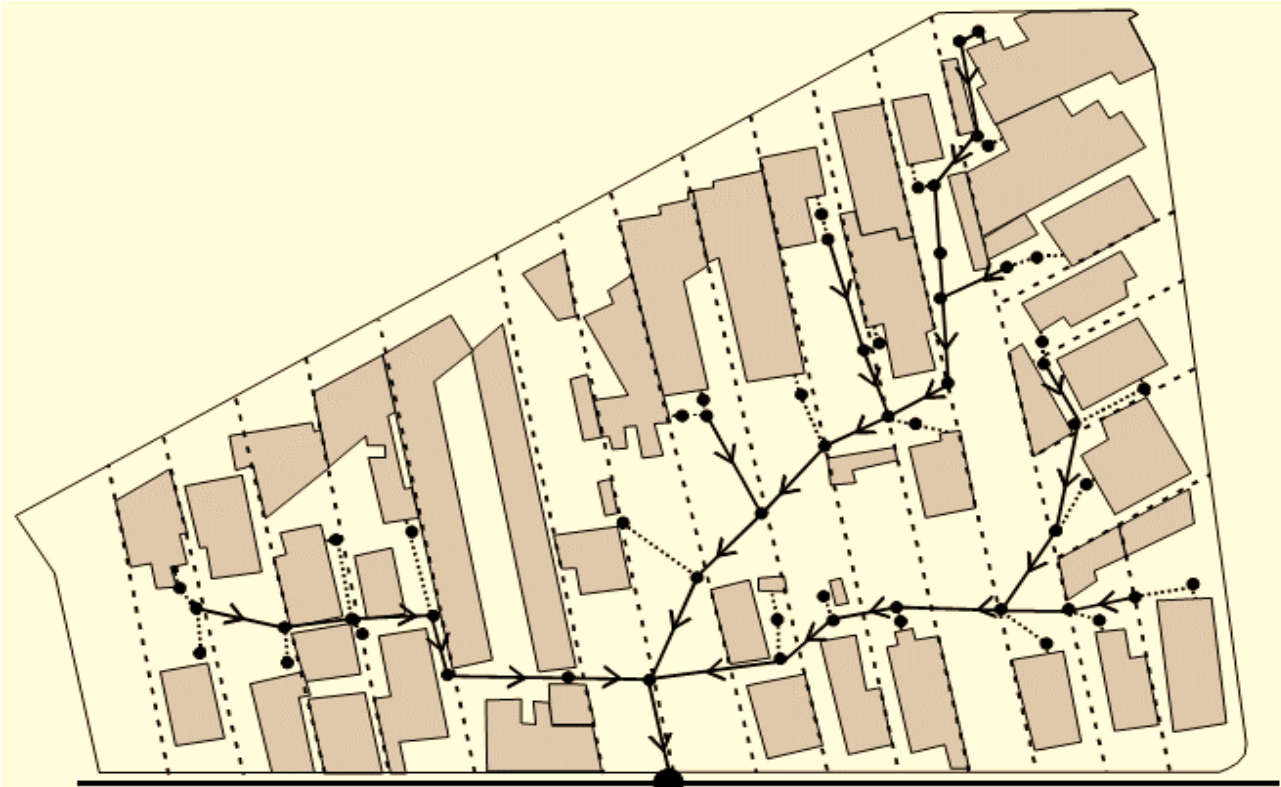


Advantages of Condominial Sewerage

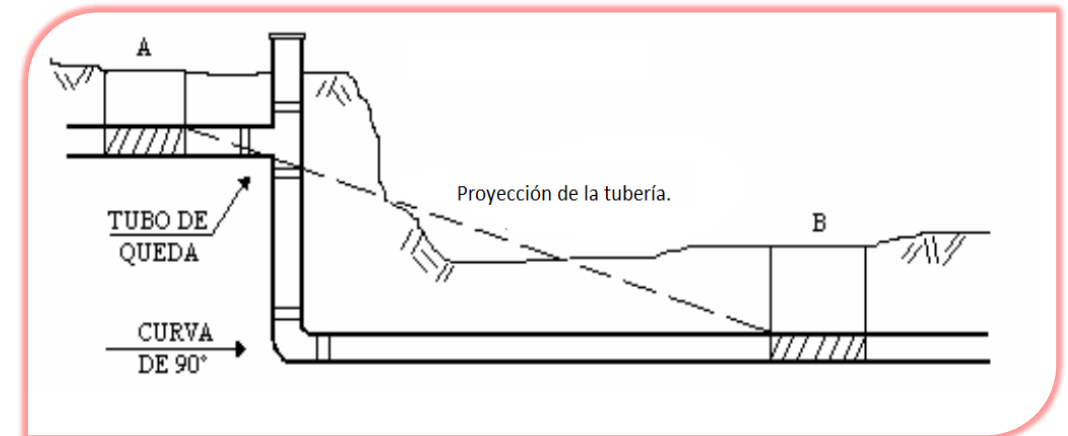
- Reduction up to 50% of the investment in the collection system, compared to the conventional system
- Various branches offer increased flexibility
- Adaptation to more complex and topographically unfavorable urbanization conditions
- Simplicity of execution and operation
- Formation of a community base



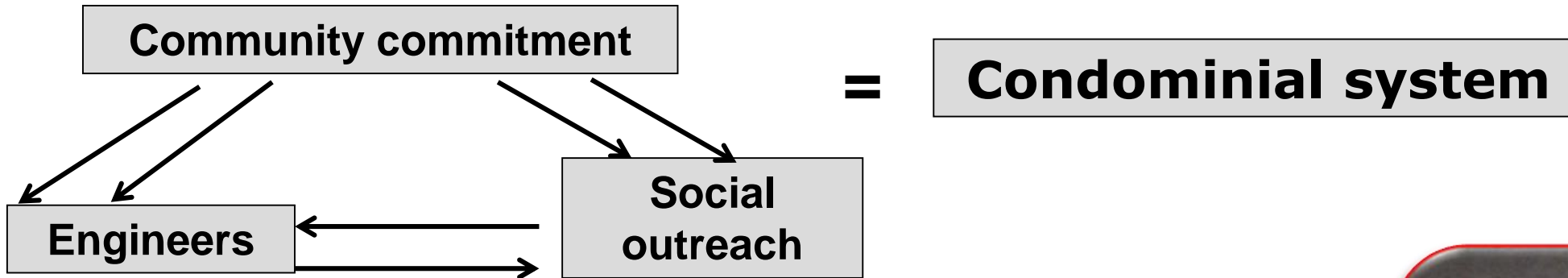
Condominial branches offer increased flexibility



**Irregular urbanization pattern
possible condominial branch**



Technical - Social Mobilization



The community chooses where the branches pass: by the sidewalk, by the garden, by the back of the lot, mixed.



ECONOMIC IMPLICATIONS

PARTICIPATION OF THE COMMUNITY

- Consensus on access rules
- Choosing the solution
- Providing labor for the construction
- Maintenance



Technical - Social Mobilization

Coordination

- With municipal officials

Training

- Theory and practice to condominial topography teams and promoters

Community promotion

- Community promoters support organization of residents in each condominium

Broadcasting through local radio stations

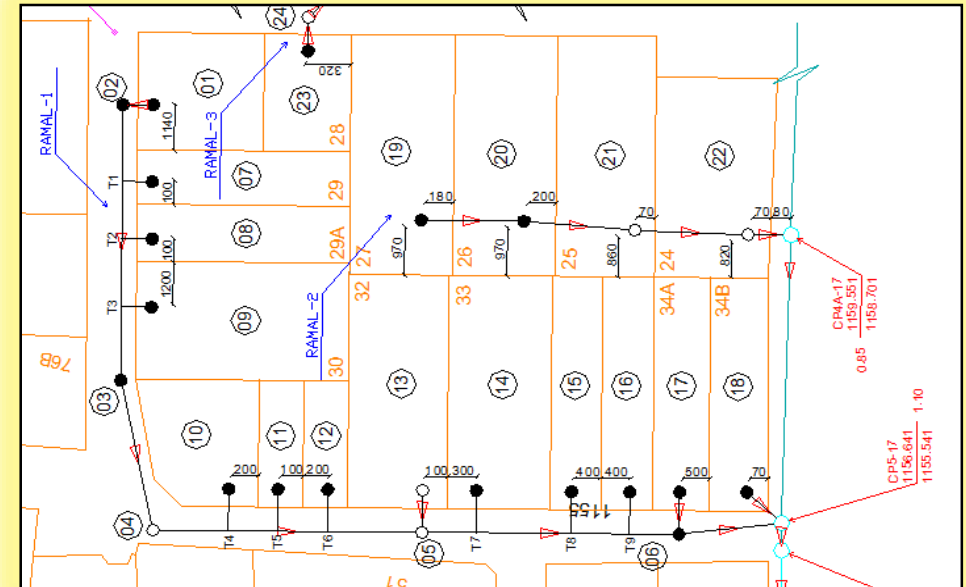
- Inform the population about the work to be done and facilitate the collaboration among users

Meetings with neighborhood leaders

- Facilitating the process of technical-social mobilization and finding champions

Finding consensual alternatives and solutions

- Consultation assemblies with users of each block and signature of the adhesion document

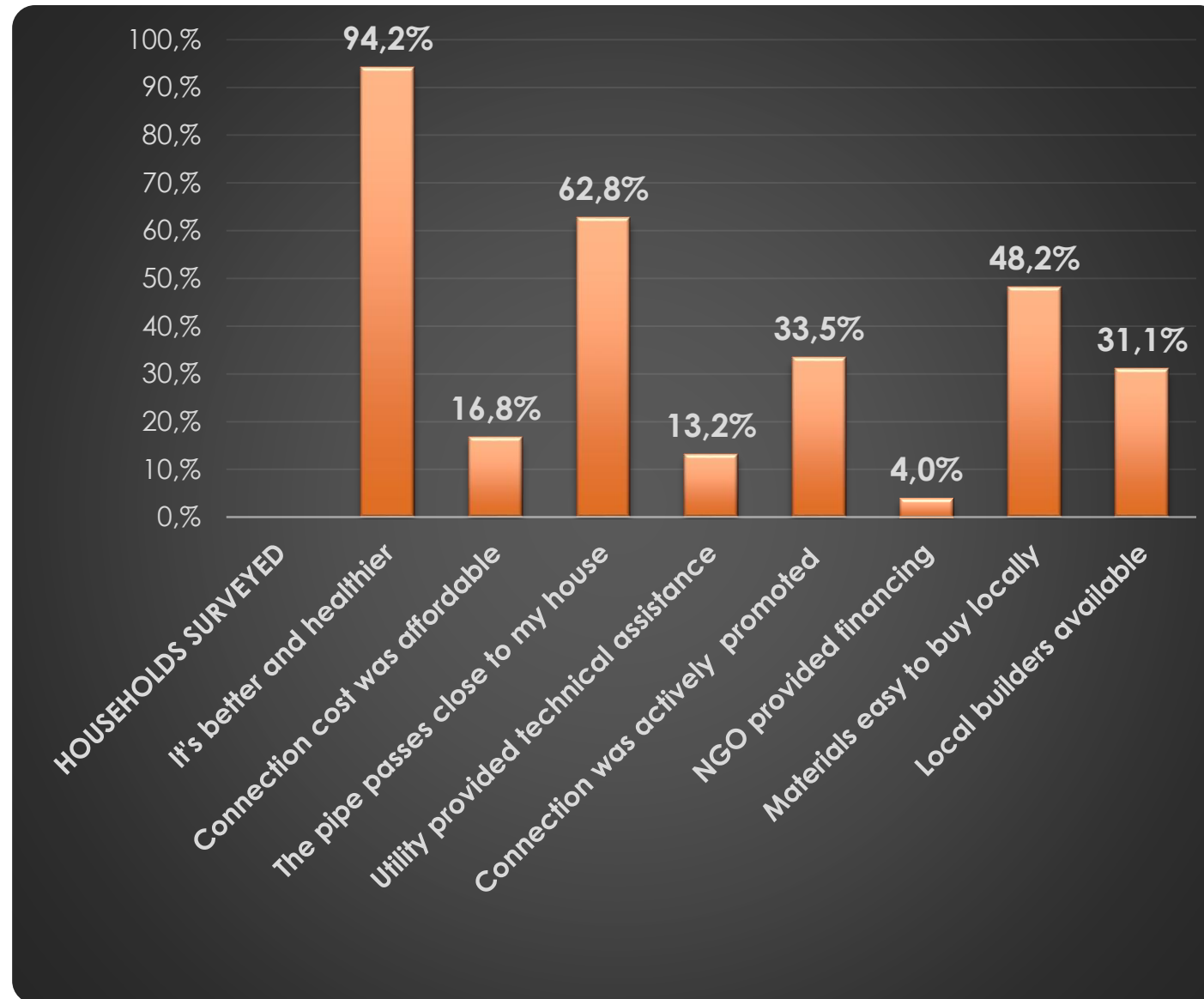


CONNECTIVITY AND COSTS(USD)

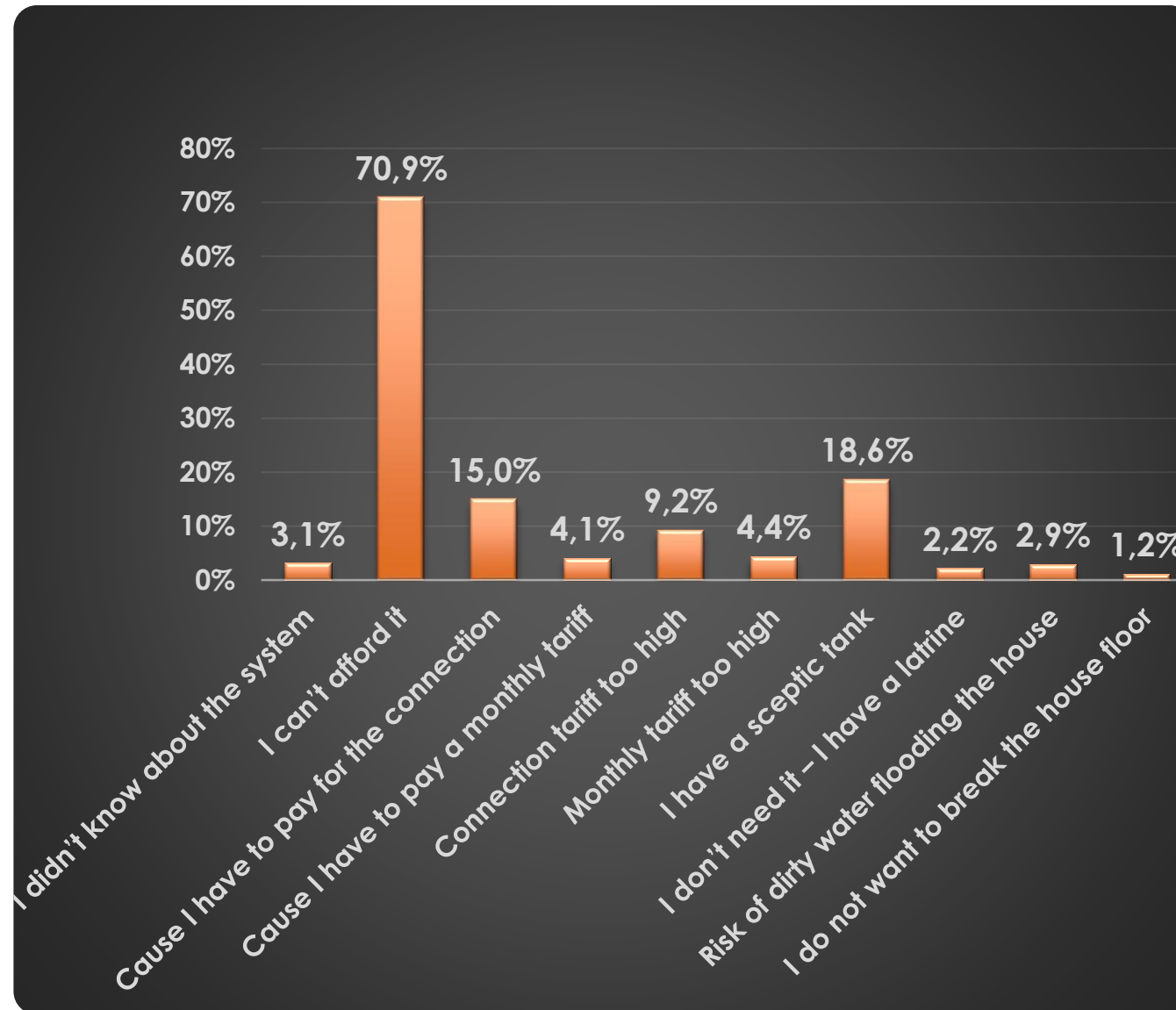
Type of Sewerage	Honduras			Nicaragua		
	Connectivity (%)	Age (years)	Cost per connection	Connectivity (%)	Age (years)	Cost per connection
Condominial	89	2.5	924	14	0.7	824
Conventional	60	10	2'631	50	10	2'241
Cost ratio			2.8			2.72

The cost per connection includes the total costs of the conveyance system divided between the number of connections to homes to benefit from the sewer system.

¿Why did you connected to the sewerage system? (758 answers)



Why have not you connected to the sewerage system? (413 answers)



LESSONS LEARNT APPLYING THIS TECHNOLOGY

- **Lack of understanding of the model and resistance to its adoption, by consultants, supervisors and construction companies**
- **Projects with innovative technology require training and ongoing support**
- **Pay due care to promoting connectivity**
- **Misconceptions during construction**



THANK YOU VERY MUCH!



**Anaerobic Upflow
Reactor (UASB) in La
Dalia, Nicaragua**



**Biofilters, El Cua
Treatment Plant,
Nicaragua**



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