

## INTRODUCTION

The city of Lima is located on the coast of the Pacific Ocean and has a current population of about 8 million. Several pollution problems affect Lima's city as well as surrounding environment caused by an inadequate water and wastewater (WW) management.

Urban and peri-urban agriculture and green areas cover around 2600 ha. Most of them are irrigated with untreated ww and treated water without monitoring.

Hence, the question raises how far both problems could benefit from each other by reuse of ww in agriculture also through implementation of new sanitation concepts as Ecological Sanitation (EcoSan).

## CURRENT WASTEWATER USE

Wastewater is applied for:

- Agricultural fields in the North and South of the city, specially during the dry season
- Irrigation parks and green areas in Lima.
- Irrigation of gardens and parks of some private institutions like universities, clubs and big enterprises
- Irrigation and fertilization of urban agriculture (UA). Projects established by NGOs and municipalities where people learn how to produce their own vegetables as additional food source, for additional income, and to improve city health.

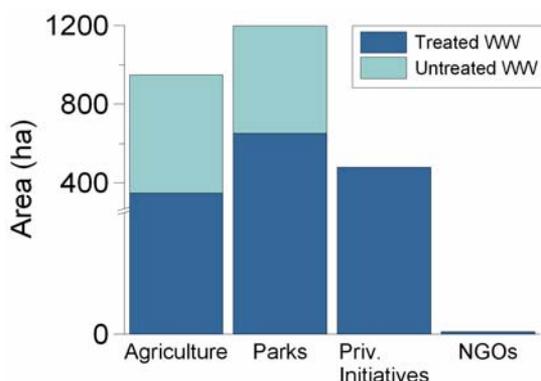


Figure 1: Current use of WW in UA and green areas



Picture 1: UA in Villa Maria del Triunfo, Lima

## FUTURE DEMAND

Reuse/recycled water will be require in:

- Agricultural fields
- New green areas have been planned within the city
- Private initiatives handle/reuse their ww themselves
- New Urban Agriculture initiatives
- Areas could be re-upgraded by ww products.

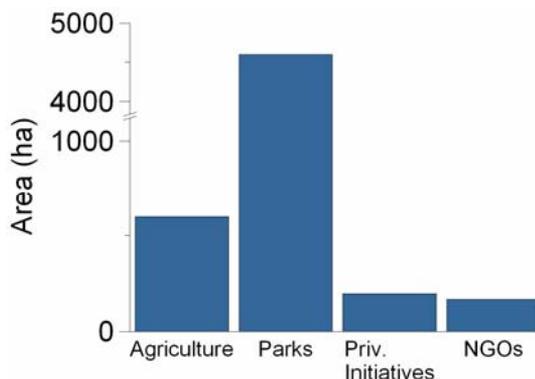


Figure 2: Areas in Lima usable for wastewater reuse



Picture 2: Areas with potential irrigation demand

## OPPORTUNITIES FOR THIS TREND

Wastewater can be treated with low cost processes (ponds, constructed wetlands, etc).

Ecosan facilities are still running over more than 5 years after the NGOs finished project supervision.

People have a tradition to work in community networks  
More than 5000 ha are available for green areas and UA.  
Ecosan and UA generate new jobs, improve environmental conditions and provide additional income and fresh food to sell and for self consumption

## ACKNOWLEDGEMENT

The authors thank the EU for the financial support within the SWITCH project as well as people and institutions participating during the survey in Lima, especially Julio Moscoso, for his comments.

## REFERENCES

- Arce, B and Prain, G. 2004. Urban Agriculture and Gender in Latin America: A case study of Carapongo, Lima, Peru. Paper presented at *Gender Mainstreaming in Urban Food Production and Food Security. 20th - 23th September 2004, Accra, Ghana.*  
WSP-LAC (Water and Sanitation Program -Latin American and Caribbean ).2006. *Saneamiento Ecologico. Lecciones Aprendidas en zonas periurbanas de Lima.*