

Volta Redonda, Brazil

Turning up the heat with the Eco-oil Program: a community development project linking cooking oil waste to energy and community education

Through a fruitful Urban NEXUS partnership between the local government, civil society and the private sector, a simple and effective program was developed to collect cooking oil waste for reuse as biodiesel.

Urban NEXUS Case Story 2014 - 07

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The project in brief

The increasing popularity of fried food amongst Brazilians has left Brazil's cities faced with the harmful environmental effects arising from the improper disposal of cooking oil. When incorrectly disposed of, a liter of cooking oil waste can contaminate up to 20,000 liters of water and increase sewage treatment costs up to 45%. (Eco Óleo, 2014). The Municipal Government of Volta Redonda, turned this problem into an opportunity, through the formation of the Eco-oil (Eco Óleo) Association of Collectors of Effluents and Solid Waste, through the Banco de Cidadania, the Municipal Fund for Development, Employment Generation, Income and Shelter. The association, together with 70% of the local schools and 110 private enterprises (2009), collects used cooking oil from households while educating citizens on the impacts of improper oil dumping. The collected oil is purchased by the Cesbra Chemical S.A. Group, a company operating a local biodiesel plant for R\$ 0,60/liter, two thirds of this amount fund Eco-oil's activities, while the rest is allocated to the participating schools. Around 22,000 liters of oil are collected per month. Incentives provided for institutions to participate include the awarding of an environmental seal, in addition to oil sales revenues.

What makes it "Urban NEXUS"?

The applied institutional NEXUS partnership linking Municipal sectors for solid- waste, development and employment to schools and the private sector, turns a food waste which is harmful to the City's water cycle into a raw material for energy production and a source of economic, environmental and social gain. The strong involvement of local schools in the project has ultimately increased education and awareness-raising amongst the civil society. The cooperation with the private sector through the biodiesel plant and private enterprises enables financial sustainability.



Date	2007-ongoing
NEXUS Sectors	Waste-Energy-Water-Transport
NEXUS Innovations	Institutions, Delivery Models (PPP); Design + Technology
Scale	City-wide
Budget	Self-financed

Urban NEXUS Definition

The Urban NEXUS is an approach to the design of sustainable urban development solutions. The approach guides stakeholders to identify and pursue possible synergies between sectors, jurisdictions, and technical domains, so as to increase institutional performance, optimize resource management, and service quality.

It counters traditional sectoral thinking, trade-offs, and divided responsibilities that often result in poorly coordinated investments, increased costs, and underutilized infrastructures and facilities. The ultimate goal of the Urban NEXUS approach is to accelerate access to services, and to increase service quality and the quality of life within our planetary boundaries.

ICLEI / GIZ 2014

Further Reading

Official Project Homepage: <http://www.ecooleo.bio.br/>

Eco-Oil Project Facebook Page: <https://pt-br.facebook.com/eco.oleo>

UNITED NATIONS Sustainable Development Knowledge Platform: <http://sustainabledevelopment.un.org/index.php?page=view&type=1006&menu=1348&nr=2187> (20 Aug 2014)

ICLEI Case Study Nr.106, 2009, Volta Redonda, Brazil: Cooking oil waste is used in community development with the Eco-oil Programme: http://www.iclei.org/fileadmin/PUBLICATIONS/Case_Studies/ICLEI_cs_106_Volta_Redonda_2009.pdf (20 Aug 2014)

GIZ and ICLEI, 2014, Operationalizing the Urban NEXUS: towards resource efficient and integrated cities and metropolitan regions, GIZ Study: www.iclei.org/urbanexus

Scope for improvement

The involvement of the health sector for increased nutritional education could be added to the existing outreach efforts. This would potentially reduce health care expenditures and lower amounts of improperly disposed cooking oil waste, while adding yet another dimension to the Urban NEXUS.

Replication

Due to its straight-forward approach, the program can be easily implemented in other cities provided the collected oil waste can be sold locally and used it as a raw material for soap production, animal feed or biodiesel.

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