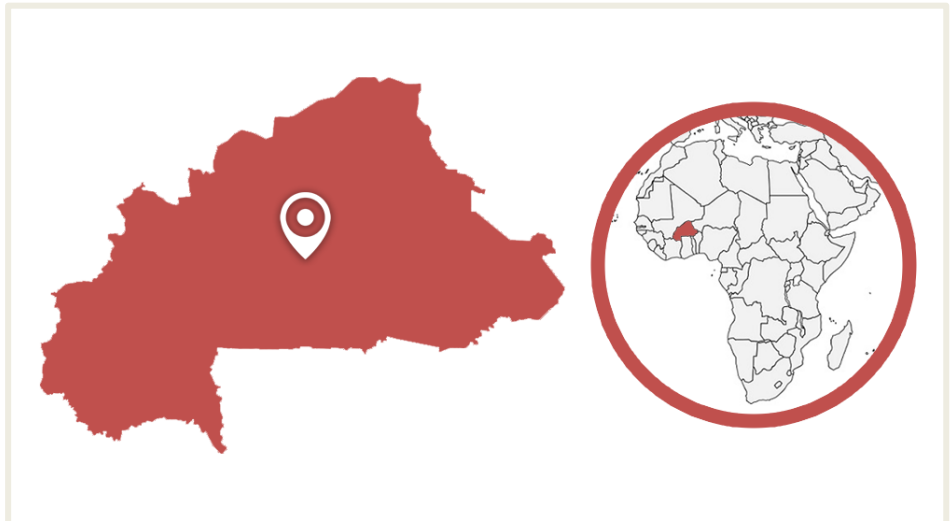


JACIGREEN : ECO-INNOVATIVE MANAGEMENT OF WATER HYACINTH

An eco-innovative 3-in-1 project to clean up rivers and defeat water hyacinth, one of the greatest threats to river ecosystems in West Africa

OVERVIEW

- Organization data:
 - ✓ Name: **Jacigreen**
 - ✓ Organization type: **Start up**
 - ✓ Year of foundation: **2016**
- Beneficiaries : **10,000 farmers and 5,000 rural households by 2021**
- Donors and financing: **Young Champion of the Earth Prize - 15 000 USD; SG de la Francophonie Women's Entrepreneurship Award - 5 000 USD; African Development Bank Fund - 15 000 USD**
- Location: **International Institute for Water and Environmental Engineering, Ouagadougou, Burkina Faso**
- Beginning date: **January of 2019**
- Motivations: **Transform the pest into a useful one by ridding the Niger River of invasive plants while producing fertilizer and electricity**



CONTEXT AND ACTION

Summary | A true scourge of rivers and native to South America, water hyacinth is an aquatic plant that proliferates at high speed and covers the surface of the water with a thick layer of plant biomass. While it initially purifies the watercourses in which it grows, it eventually asphyxiates them when it reaches maturity, leading to eutrophication. Native species of animals and plants are strongly impacted, as are fish that do not tolerate high levels of nutrients. Human activities are also hindered, as boats can no longer pass through and water can no longer be pumped for irrigation. The health impact is equally worrying, as this green carpet shelters many nests for mosquitoes, proliferating and spreading malaria.

This invasive alien species mainly affects the Niger River, but has also spread throughout the Sub-African continent and affects many other regions including the dams of Burkina Faso and Lake Victoria.

Mariama Mamane, a 29-year-old Nigerian woman and former student in water and sanitation engineering, was looking for answers on the silting and pollution of the Niger River. Since 2013, she set up a project combining agriculture, sanitation and energy. Rather than simply trying to destroy this plant, she finds a use for it by using it for phyto-purification of watercourses and transforming it into natural fertilizer by anaerobic composting. Phyto-purification is a sanitation system that uses bacteria from the roots to purify water. It also finds a profit by using the biogas released to produce electricity. Since 2016, Mariama has received several awards for her innovative project.

Local challenges |

- Aquatic environments in Sub-Saharan Africa threatened by the proliferation of water hyacinth, which stifles aquatic life, reduces access to fishing grounds, reduces the quality of drinking water and contributes to the persistence of malaria;
- Energy deficit on the African continent: more than 75% of Africans do not have access to electricity;
- Degradation of arable land due to the increasing use of chemical fertilizers to cope with population growth.

Local responses |

- Water purification by hyacinth-based purification mechanism to improve access to safe drinking water;
- Production of organic fertilizers by anaerobic composting of hyacinth;
- Valorization of the biogas obtained in the hyacinth degradation process into electrical energy by cogeneration;
- Answer to food security challenge and fight against desertification phenomena.

BENEFITS

Environmental | By freeing the watercourses from these invasive aquatic plants, Jacigreen reduces asphyxiation of the watercourses and thus preserves aquatic biodiversity. This project also works for agro-ecology by promoting the use of organic fertilizers. At the same time, it provides access to clean energy for rural populations.

Social | With Jacigreen, access to drinking water is improved. This project is also part of the fight against malaria, which causes more than 3000 deaths per day in Sub-Saharan Africa. Moreover, it contributes to enhance school enrolment of children, and also to facilitate access to medical care. By providing organic fertilizers, anaerobic composting contributes to food security.

Economic | In view of the progress of the project, it is planned in 2021 to produce 500,000 kg of natural fertilizer and 2,700,000 Kwh of electricity, enough to supply 5000 households. This energy is cheaper for families than coming from another source of production.



« I am one of those people who believe in fate, it can be full of trouble, that's no reason to lose hope, because the only obstacle to doing things is yourself. »

Mariama MAMANE

SUCCESS FACTORS

- Mobilization of funds for the research and development phase;
- Technical and managerial support for the International Institute for Water and Environmental Engineering incubator.

OBSTACLES

- Technology project requiring a lot of research to refine solutions;
- Lack of effective collaboration for technology transfer with other institutions with experience in the field;
- Initially, little support from other students at Mariama University.

▪ Contact:

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▪ Related link(s) :

<https://www.youtube.com/watch?v=f7dr1ohnq-Y>

<http://web.unep.org/youngchampions/2017/winners>