



Assessing the potential for niche and agrobiodiversity conservation

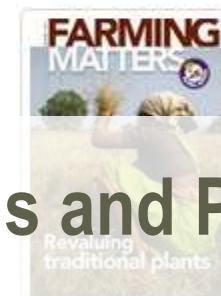
By Pallante, G.; Drucker, A.; Sthapit, S.



Agricultural biodiversity and women in India

Factsheet on millet promotion efforts

By King, O.I., Padulosi, S., 2017



Making millets matter in Madhya Pradesh

A decline in minor millet cultivation in Madhya Pradesh: a cereal crop is in motion. Farmers are

By Prasad, S.; King, O.I., Roy, S.; Priya, S.



Climate change and crop diversification in the Altiplano

This study explored the role of crop diversification in the northern Bolivian

Update on Project Communications and Publications

Gennifer Meldrum

IFAD-EU NUS Steering Committee Meeting and Workshop

Bioversity International, Rome, Italy

Types of Communication

- Webpage
- Blog entries
- Photos on Flickr
- Team Communications
- Twitter
- Outreach events
- Publications



NUS Community Webpage

- Updates have been made to the design
 - Improve navigation of publications
 - Improved search function
 - Other minor design changes
- Site-specific pages have been added
- Pages on target crops have been added



Neglected and Underutilized Species Community

HOME ABOUT US RESEARCH RESOURCES MEDIA CONTRIBUTIONS

Chaya and tepary bean in Guatemala

Guatemala is a good habitat for cereals, in addition to a rich wild flora and fauna, the country is also a center of origin and diversity for many globally-important crops such as maize, bean, potato, pumpkin, squash, cocoa, cassava, leafy greens, and peppers and numerous lesser-known crops. The high agricultural biodiversity in Guatemala partly results from and reflects the high cultural diversity that exists in this country, where a large portion of the population is indigenous and a large number of ethnic groups coexist. Much knowledge on the use of local biodiversity is maintained by indigenous peoples for satisfying their needs for meeting substantial needs of food, shelter and medicine.

Many of the native plants used by rural communities in Guatemala are wild-collected or semi-domesticated and have not received much research attention to enhance their roles in the livelihoods of Guatemalan peoples, when it could have much higher nutrition values and higher stress tolerance than more commercial crops introduced by European colonizers. The programme 'Linking agroecosystems, value chains, climate adaptation and nutrition: Empowering the poor to manage their food' by IFAD and the European Commission from 2013 to 2018 aims to strengthen the capacities of farmers to manage risks associated with climate change, poor nutrition status, and economic disenfranchisement through leveraging agro-biodiversity. The programme is focused on chaya (*Chroocarpus acanthifolius*) and tepary bean (*Phaseolus acutifolius*) in Guatemala, which were identified through multi-stakeholder consultations as native species with strong potential to support better nutrition and resilience.

Chaya or Mexican spinach (*Chroocarpus acanthifolius*) is a domesticated shrub that has been cultivated since pre-hispanic times in Mesoamerica. The leaves are highly nutritious, containing significantly higher amounts of crude protein, fibre, calcium, potassium, iron, selenium, zinc and β-carotene than spinach. It is a perennial woody species that grows up to 10 meters tall. It is often planted in gardens and fields as a hedge. The nutritious and leafy leaves can enhance diet quality for rural and urban Guatemalans, especially in the lean season, as the plant produces a harvest year-round. The promotion and use of this species can contribute to strengthen indigenous food culture and provide an income source for marginal producers. Despite the many potentials of chaya, there has been little research on this crop and further work to promote its use in Guatemala. A nutrition approach addressing multiple objectives in supply and demand is being applied for this crop in the project, engaging consultation and participation of multiple stakeholders to ensure the interventions are pro-poor and gender-sensitive.

Tepary bean (*Phaseolus acutifolius*) was domesticated in the dry regions of Central Mexico and the southwestern USA. It is a relative of common bean (*Phaseolus vulgaris*), which is the fundamental staple in Guatemalan diets alongside maize. Tepary bean is well-adapted to arid conditions with high drought, heat, and cold tolerance as well as being nutritious. It is high in protein and outperforms common bean in hot environments. For this reason, it can support diversification of farm systems in Guatemala for climate change adaptation. Tepary beans are comparable or superior in nutritional content compared to major pulses. The culinary properties are distinct from common bean and its taste is appreciated by populations in its native range and beyond. This crop has been grown in great levels in Guatemala but has essentially fallen out of cultivation. The performance of this crop and its adaptability to farmers and consumers in Guatemala are being explored in the project. Tepary is being introduced to farmers through participatory crop evaluation trials, followed by novel seed sourcing approach. Consumer acceptability trials in urban and rural populations are also being conducted.

IFAD-EU NUS

- Chaya and tepary bean in Guatemala
- Plant and Germplasm resources in Guatemala
- Better yields in maize
- Publications
- Project Launch Conference
- Contacts

Photo album

Publications

- Promoting drought-tolerant tepary bean (*Phaseolus acutifolius*) and chaya (*Chroocarpus acanthifolius*) in the dry zones of Guatemala for better climate resilience and nutrition
- Underutilized crops to enhance resilience and nutrition in Guatemala, this article

News

- First results of tepary bean trials in Guatemala
- First results of tepary bean trials in Guatemala
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More latest news here

Contact us: info@nus.org

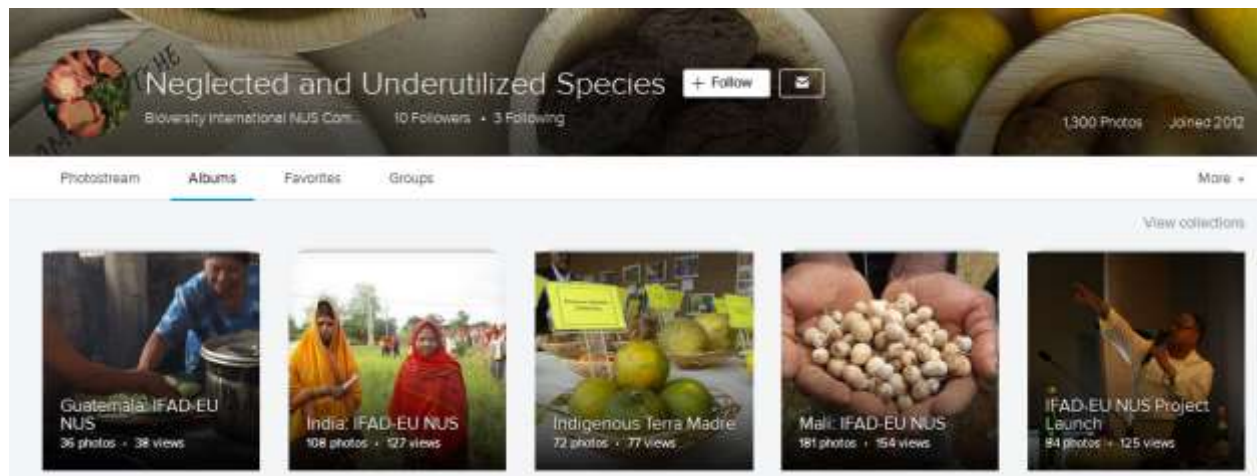
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Blog entries

- Since last steering committee meeting (June 2016):
- 9 blogs published
 - 4 on NUS Community site
 - 5 on Bioversity webpage
- **Guatemala: 2**
 - *First results of tepary trials, training on recipes in the villages*
- **India: 3**
 - *IAC posters, farming matters publication, piloting the 5Caps-G*
- **Mali: 1**
 - *Harvest time (field visit)*

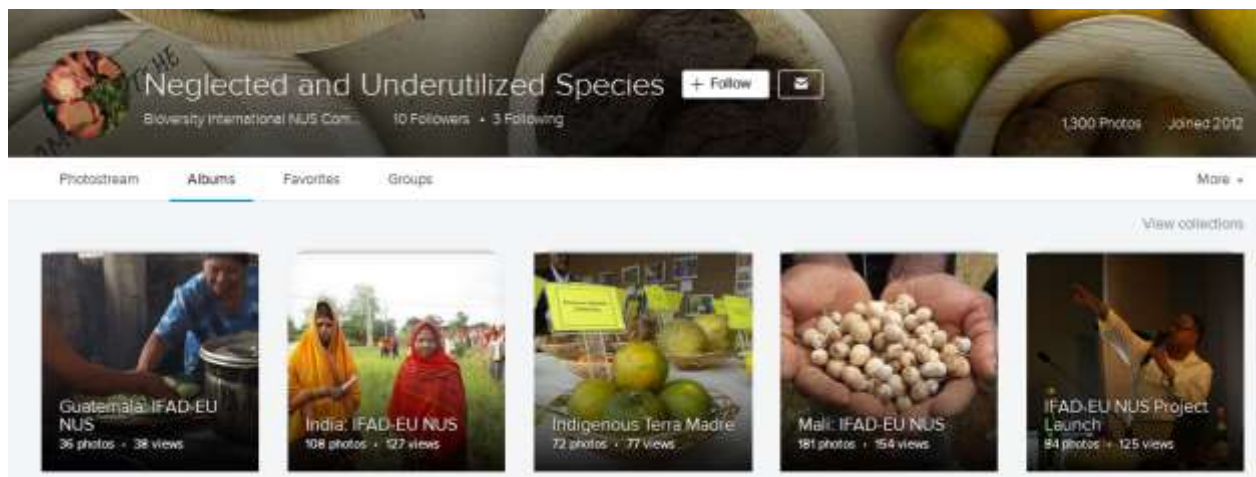
Photos on Flickr

- Photo collection is developing for each country
- More photos from our partners, market consultants would help to build more photo evidence of our interventions
- Low quality images taken from reports but will need the full resolution images for publications



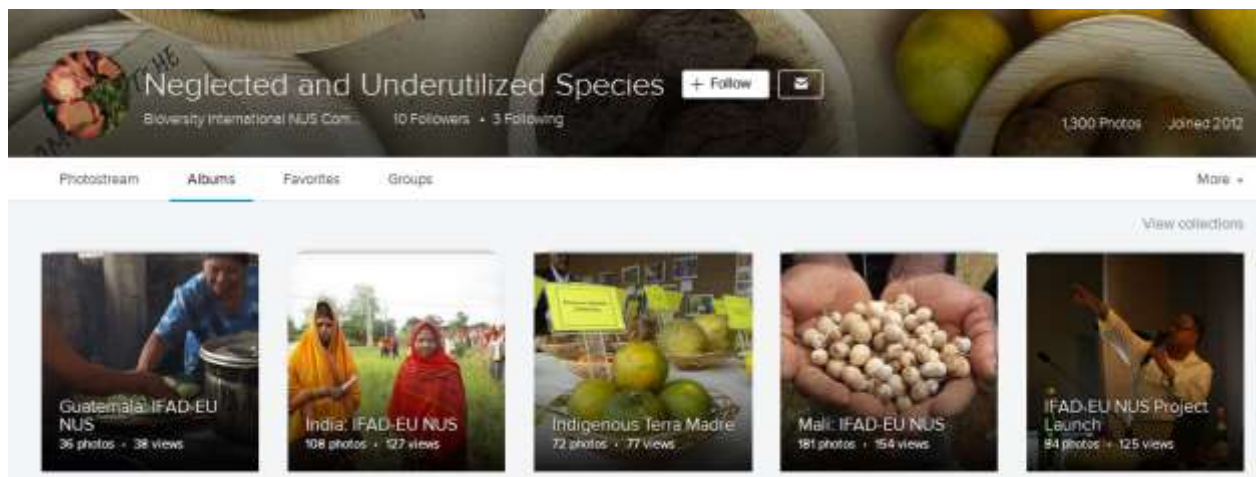
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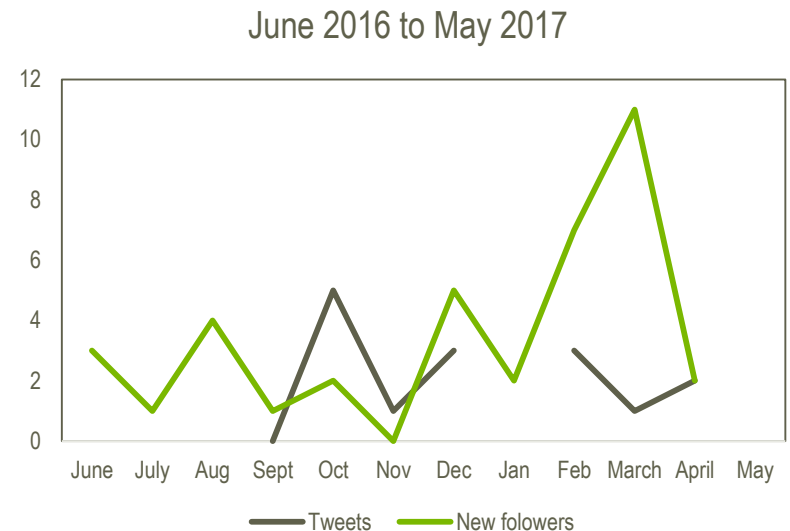


Project team communications

- Email dominant mode of communication, sometimes skype or phone
 - Regular meetings with Nadezda have been useful to keep up to date
 - Can aim for more regular meetings between project partners
- Facebook group with ASA team, not very active but still useful and some very useful images have been shared there
- Skype has had poor quality in Mali but we are keeping good communication with phone and email. Early morning seems to have a better connection.

Twitter

- 286 followers (+56)
- Posts about project and NUS in general
 - Not always consistent, mainly when someone points out a related article
- Nina Lauridsen engaged from end of June to help with communications and reporting support



Event: International Agrobiodiversity Congress

- 900 delegates from 60 countries
- Stakeholders roles in agrobiodiversity management and conservation of genetic resources
- 3 posters on our work in India



Events: Advocacy

- Resource person at the Expert Workshop organized by the FAO International Treaty on PGRFA on the design of a Toolbox for the sustainable use of plant genetic resources for food and agriculture in Volterra, Italy, 19-21 July 2016
- Keynote speaker at the International ISHS Conference on “Poverty, Hidden Hunger and Horticulture” held in Cairns, Australia, on 24 Nov 2016
- Expert Meeting on NUS held at the IITA Campus in Cotonou, Benin, on 29-30 November 2016
- Invited talk at the NESTLE’ Plant Science Anniversary Workshop, held in Tours on 15 December 2016. Although the presentation
- Lectures: University of Milano (9 May 2016), University of Roma Tre (23 June 2016), University of Bern (Switzerland), University of Waterloo (Canada), Giessen University, Germany (8 March 2016) and Kyungpook National University, Korea (25 January 2017)

Publications: Scientific

Bazile, D.; Pulvento, C.; Verniau, A.; Al-Nusairi, M.; Ba, D.; Breidy, J.; Hassan, L.; Mohammed, M.I.; Mambetov, O.; Otambekova, M.; Sepahvand, N.; Shams, A.; Souici, D.; Miri, K.; Padulosi, S. (2016) Worldwide evaluations of quinoa: preliminary results from post international year of Quinoa FAO projects in nine countries. *Frontiers in Plant Science* 7

Meldrum, G., Mijatović, D., Rojas, W. J. Flores, M. Pinto, G. Mamani, E. Condori, D. Hilaquita, H. Gruber and S. Padulosi. (2017). Climate change and crop diversity: farmers' perceptions and adaptation on the Bolivian Altiplano. *Environment Development and Sustainability*

Mondal A., I. O. King, S. Roy, S. Priyam, G. Meldrum, S. Padulosi, and S. Mishra (2016). Making millets matter in Madhya Pradesh. *Farming Matters* 06, 10-13

Pallante, G.; Drucker, A.; Sthapit, S., 2016 Assessing the potential for niche market development to contribute to farmers' livelihoods and agrobiodiversity conservation: Insights from the finger millet case study in Nepal. *Ecological Economics*, Vol.130 p. 92-105



Publications: Conference documents

Padulosi S., Meldrum G., and Gullotta G., Editors, 2016. Agricultural biodiversity to manage the risks and empower the poor. Proceedings of the International Conference 27-29 April 2015, Rome, Italy. Bioversity International, Rome, Italy.

Meldrum, G. Sthapit, S., Rojas, W., King, E.D.I.O., and Padulosi, S. 2016. Methodology mapping for resilient production systems: approaches and results from surveys in Bolivia, India, and Nepal. In 3rd International conference on neglected and underutilized species (NUS): for a food - secure Africa. Accra, Ghana, 25-27 September 2013. Proceedings (Hall, R.A. and Rudebjer, P., eds.). Bioversity International, Rome, Italy and International Foundation for Science, Stockholm, Sweden.

Rudebjer, P., Meldrum, G., Hall, R., Padulosi, S., Hermanowicz, E., and Ghezze, N. 2016. Research capacity for neglected and underutilized species: a situation analysis in ten African countries. In 3rd International conference on neglected and underutilized species (NUS): for a food - secure Africa. Accra, Ghana, 25-27 September 2013. Proceedings (Hall, R.A. and Rudebjer, P., eds.). Bioversity International, Rome, Italy and International Foundation for Science, Stockholm, Sweden



Publications: Posters

Mondal, A., Roy, S., Padulosi, S., Priyam, S. and Meldrum, G. 2016. Making millets matter in Madhya Pradesh. Poster presented at the 1st International Agrobiodiversity Congress, New Delhi, India 6-9 November, 2016.

Priyam, S., Padulosi, S., Hunter, D., Meldrum, G., and King, E.D.I.O. 2016. Can agrobiodiversity support healthy foods and healthy eating in India's School Feeding Programme? Poster presented at the 1st International Agrobiodiversity Congress, New Delhi, India 6-9 November, 2016.

King, E.D.I.O. and Padulosi, S., 2016. Methods and Best Practices for enhancing the use of Nutritious Small Millets in India. Poster presented at the 1st International Agrobiodiversity Congress, New Delhi, India 6-9 November, 2016



Publications: Briefs and fact sheets

Clancy, E. and Vernooy, R. with contributions from Adam Drucker, Jacob van Etten, Arnab Gupta, Michael Halewood, Danny Hunter, Devra Jarvis, Rose Nankya, Isabel López Noriega, Stefano Padulosi, Marleni Ramírez, Neeraj Sharma and Bhuwon Sthapit. 2016. Realizing farmers' rights through community-based agricultural biodiversity management. Policy brief. Bioversity International. Rome, Italy

Project factsheet and crop factsheets developed for each site, a series of briefs in similar format expected to be produced for all major activities.
Needs for translations, corrections to be discussed

Publications: Recipes

Mondal, S. and Singh, V. 2016. Embracing millets back to life: Compilation of millet recipes of tribals of Mandla District, Madhya Pradesh. ASA and Bioversity International

Pereira, N., and Maldonado, M. F. 2016 Manual de preparación de alimentos a base de chaya. Guatemala City: UVG.

RECETAS CON CHAYA

El documento presenta dos recetas simples y rápidas de elaborar que incluyen Chaya.



La Chaya es una hoja comestible de origen varietal, y tiene parte de la información de las culturas maya, azteca y de origen africano por sus raíces nativas y sus hábitos de cultivo y consumo a la vez que a la base ancestral de platos.



PREPARACIÓN PREVIA :

Las hojas de Chaya deben ser lavadas, cortadas y cocinadas en agua hervida por 5 minutos.



0:10:00 minutos

El agua que se utilizó puede ser utilizada en la elaboración de jugos o en ensaladas.



Kangani Ki Makheri



L. Akhila 'Bai'

A spicy dish made from fox tail millets (kangni)

Preparation Time: 30-45 minutes



Ingredients

- 250g Fox tail Millets
- 250g Buttermilk
- 1 Liter Water
- 2 Tablespoons Cooking Oil
- 4-5 strands of Garlic

Recipies

1. Cut small pieces of garlic.
2. Put oil in the open utensil for about five minutes.
3. Put garlic pieces in the oil till they become rust colored.
4. Mix a liter of water and buttermilk add it in the garlic.
5. Wash the fox tail millets and put it in the boiling mixture.
6. Put spices like Red chili powder, Jeera seeds (Carum seeds) and turmeric powder according to taste.
7. Let it cook at low heat till the water in the utensil evaporates leaving the cooked millets look like diluted Dal-rice mixture.

Publications: Other research documents

Tajiona Manguesso, L.L. 2016. Policy analysis for better use of neglected and underutilized species in Mali. Thesis completed in partial requirement for the Masters in Human Development and Food Security, Roma Tre University, Rome, Italy

Shambhavi case study series, final details being addressed

- Package of practices for millet cultivation
- Consumer perceptions and use of millets (rural and urban)
- NTFP value chains

Baseline reports produced for all three sites, some final details to be addressed

Thank you

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www.biodiversityinternational.org

