Food and Agriculture Organization of the United Nations

INTERNATIONAL YEAR OF
MILLETS
2023

International Year of Millets 2023
Final Report

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Food and Agriculture Organization of the United Nations
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Contents

Acknowledgements iv
Abbreviations and acronyms v
Foreword vii

Background 1
What are millets? 1
Key messages 3
Millets species 4
Infographic: Key facts about millets 6

The IYM communication campaign 7
The IYM website 7
Visual identity 7
IYM Communication Handbook and Toolkit 7
Infographic: IYM outreach in numbers 8
Videos 10
Podcasts 11
Storytelling initiative: Millet champions 11
Photo contest 12
Global Chefs Challenge 15

Knowledge sharing 16
IYM publications 16
IYM webinar series 17
Networks 18

Events 19

The way forward 23
FAO Actions as part of the IYM Legacy 23
Collaboration and partnership 25

Recommendations 27

A new era for millets 33

Annex
IYM Steering Committee 34
Notes 36

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The IYM was governed by a Steering Committee (**Annex**), to whom a debt of gratitude is owed for their continued and invaluable guidance and support in the development and implementation of the IYM Global Action Plan. Special thanks go to the Republic of India, with Jujjavarapu Balaji serving as Chair, and to the two Vice Chairs: Jacqueline Hughes of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and Yaya Adisa Olaitan Olaniran of the Federal Republic of Nigeria. The Steering Committee consisted of representatives from governments, international organizations, the private sector, research and development institutions, and civil society.

Special recognition is also given to the dedicated members of the IYM Secretariat, consisting of technical experts from FAO and led by the Plant Production and Protection Division (NSP) (Zdravka Dimitrova, Eloisa Caixeta Cunha, Makiko Taguchi, Fenton Beed, Isabella Trapani, Haekoo Kim, Mia Rowan, Linda Perella, Alessia Laurenza, Elena Guilavogui, Ivan Landers, Adey Bayou, Diana Gamal, Jingyuan Xia) in collaboration with the Office of Communications (OCC) (Aoife Riordan, Claudia Valdivielso Sancho, Guido Chiefalo, Clara Velez Fraga, Denise Martinez, Laura Hernández Borrás, Sreya Banerjee). Further support was provided by the Food Systems and Food Safety Division (ESF) (Divine Nije), the Food and Nutrition Division (ESN) (Ana Islas Ramos, Bridget Holmes, Doris Rittenschober, Fernanda Grande), the Inclusive Rural Transformation and Gender Equality Division (ESP) (Tacko Ndiaye), the Markets and Trade Division (EST) (Erin Collier), the Land and Water Division (NSL) (Federica Chiozza, Rosaida Dolce), the Office of Climate Change, Biodiversity and Environment (OCB) (Francisco Lopez), the Office of Innovation (OIN) (Selvaraju Ramasamy, Puyun Yang) and the Partnerships and United Nations Collaboration Division (PSU) (Kayo Takenoshita).

Heartfelt gratitude is extended to all supporters of the IYM and millet champions for their tireless efforts in raising awareness and driving action within their respective fields and regions. FAO deeply appreciates the contributions made by numerous individuals and organizations to the commemoration of the IYM. Their diligent and enthusiastic work has highlighted the many benefits of millets for our food security and health, as well as their importance in our fields, markets and on our tables.

Abbreviations and acronyms

BBC	British Broadcasting Corporation
CIRAD	French Agricultural Research Centre for International Development
COAG	Committee on Agriculture
CoP	Community of Practice
COP	Conference of Parties
FARA	Forum for Agricultural Research in Africa
FAO	Food and Agriculture Organization of the United Nations
G20	Group of 20
ICAR	Indian Council of Agricultural Research
ICBA	International Center for Biosaline Agriculture
ICARDA	International Center for Agricultural Research in the Dry Areas
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFAD	International Fund for Agricultural Development
IGC	International Grains Council
IIMR	Indian Institute of Millets Research
IYM	International Year of Millets
NUS	neglected and underutilized species
SDGs	Sustainable Development Goals
SMEs	small and medium-sized enterprises
WFP	World Food Programme
WTO	World Trade Organization

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Foreword

Millets are rooted in ancient cultures and ancestral traditions and have long survived harsh growing conditions, sustaining communities across Asia and sub-Saharan Africa – where they remain a traditional staple crop. Millets are full of potential due to their nutritional qualities, climate resilience and adaptability, offering opportunities for improving global food security and bolstering economic growth. Yet their benefits are often overlooked.

The importance of millets cannot be overstated, especially in a world experiencing an increasing and intensifying climate crisis, as well as conflicts, poverty and inequalities. In 2023, around 733 million people faced hunger and about 2.8 billion lacked access to a healthy diet. It is evident that the world is off track to achieve the Sustainable Development Goals. Amid these challenges, sustainably producing and consuming millets emerges as a promising strategy to diversifying agrifood systems and diets.

The International Year of Millets (IYM), observed in 2023, served as a reminder of the value of millets and their inherent contribution to transforming our agrifood systems to become more efficient, inclusive, resilient and sustainable. It helped us rediscover the many reasons why these crops should be in our fields, in our markets and in our tables. But, the Year also brought to light the challenges faced by the millets sector. Appropriate mechanization, technologies and innovation are necessary to improve harvesting and processing, thereby reducing losses.

The Food and Agriculture Organization of the United Nations (FAO), as lead agency for the Year, raised global awareness about the importance of millets– as well as its challenges and opportunities – through impactful initiatives and campaigns, which are captured in this report. It is worth mentioning that FAO has been working to promote the sustainable production and consumption of millets in countries like Ethiopia, India, Pakistan, Somalia, South Sudan, Sri Lanka, Thailand, Uganda and Zimbabwe through the FAO One Country One Priority Product (OCOP) flagship initiative; the GEF-7-funded Sustainable Forest Management Impact Program on Dryland Sustainable Landscapes; and the FAO China South-South Cooperation Programme. Together with the International Atomic Energy Agency, FAO has also just launched a five-year multi-partner research programme to incorporate improved genetic traits for pearl, finger and proso millets. We need to continue building on this important work.

Our efforts cannot end with this important International Year. We must remain commited to investing in research and development in order to breed superior varieties of millets and cultivate them sustainably. We need to ensure that these crops

are harvested and processed without losing their nutritional benefits, while generating equitable incomes, in particular for small-scale producers, and protecting natural resources. But, if we are to reach impact at scale, we need to continue working together with all stakeholders, including governments, development partners, farmers and the private sector.

Let us continue to champion millets for their rich heritage and outstanding potential. Together, we can sow these seeds for a sustainable future.

Beth Bechdol
FAO Deputy Director-General

©ICRISAT

Background

Global challenges like hunger and malnutrition, climate change, biodiversity loss, and rising poverty and inequalities reinforce the need to build sustainable, inclusive and efficient agrifood systems. To do so, it is key to empower small-scale family farmers, create decent jobs through small and medium-sized enterprises, build robust value chains that are resilient to shocks and stresses, and improve access to affordable, diverse and healthy diets. Millets present a critical opportunity to address these issues and provide solutions, because of their potential to contribute to food security, biodiversity, healthy diets and nutrition in many countries.

Cultivated for thousands of years across different cultures and continents, millets are now predominantly consumed in sub-Saharan Africa and South Asia. With the annual global consumption of millets averaging around 30 million tonnes, which is far below other staple crops like wheat, maize and rice, there is great potential for market growth (International Grains Council, 2023).

In March 2021, the 75th Session of the United Nations General Assembly declared 2023 the International Year of Millets (IYM), based on a proposal submitted by the Government of the Republic of India and supported by 72 countries. The International Year of Millets played a crucial role in raising awareness of the nutritional benefits of millets, their adaptability to adverse and changing climatic conditions, and the opportunities for economic development and innovation they provide. The Year strengthened the interactions between science and policy, facilitated partnerships, mobilized stakeholders to produce and promote millets, stimulated research into and the development of the millets sector, and encouraged the consumption of millets by the general public.

This report provides a summary of the IYM and its activities, key recommendations and policy actions. The intention is to mobilize key stakeholders and mark the Year as the start of a new era, giving rise to a thriving millets sector.

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WHAT ARE MILLETS?

Millets are a diverse group of small-grained cereals adapted to drylands and changing climates. They include various grass species that produce small grains such as pearl, proso, foxtail, barnyard, little, kodo, browntop, finger and guinea millets, as well as black and white fonio, sorghum, teff and Job's tears. While the IYM highlighted some of the most commonly grown varieties of millets, a vast range of species are cultivated around the world.

Millets are hardy crops that support lives and livelihoods, in some of the world's most vulnerable communities. The crops can grow in relatively poor soils and under arid conditions. They resist pests and diseases, and are resilient to adverse climatic conditions. For millions of people, they are a staple food and a vital source of daily nutrients. They have traditionally served as an important weening food to safeguard the health of infants and young children transitioning to consuming solid foods.

Millets offer a range of ingredients for various types of cuisines across diverse cultures. As resilient and nutritious crops, they can contribute to food security and the transformation of agrifood systems. Moreover, their suitability for crop rotation and minimal need for pesticides and fertilizers support biodiversity and sustainable land use.

There is significant potential for scaling up consumer demand, local production and the global trade of millets, thereby creating decent jobs in dryland regions. It is essential to address the low yields of many millets species, reduce high losses during harvest and postharvest storage, improve access to food and processing technologies, and increase consumer and market demand.

KEY MESSAGES

Millets are climate-resilient crops

Millets are climate-resilient crops because they can grow on arid lands with minimal inputs and maintenance, are tolerant or resistant to diseases and pests, and are more resilient to climate shocks than most cereals. Millets can grow on marginal lands, poor soils and fertile drylands, and do not heavily deplete soil nutrients. By providing land cover in arid areas, they reduce further soil degradation and help support biodiversity and sustainable land restoration.

The sustainable production of millets can fight hunger and contribute to food security and nutrition

In arid areas, millets are often the only crops that can be harvested during the dry season and they are a crucial part of the household food basket. Millets can help vulnerable populations overcome food scarcity, contributing to their food security and nutrition.

Millets can contribute to healthy diets

Millets are versatile ingredients used in many cuisines around the world. As whole grains, millets provide carbohydrates, dietary fibre, minerals, protein, antioxidants and vitamins. Each variety of millets provides different amounts and types of essential nutrients and fibre. Dietary fibre plays a role in regulating bowel function, blood sugar and lipids, and satiation. Millets are also gluten-free and a cost-effective source of iron.

Greater consumption of millets can offer opportunities to small-scale farmers and other agrifood systems actors to improve their livelihoods

Millets can help diversify agrifood systems and give farmers, processors and entrepreneurs more opportunities for financial success, while taking better care of the environment. The production of millets and their demand have declined as other cereals such as wheat, maize or rice-based products became a dietary preference. Promoting millets and regaining the market share can create additional sources of revenue for smallholders and in the food sector.

Millets can have far-reaching impacts on farmers and Indigenous Peoples

Millets were among the first plants to be domesticated and, for millennia, they have been an important food for hundreds of millions of people in sub-Saharan Africa and Asia. They are deeply rooted in ancient cultures and have contributed to the food security and nutrition of Indigenous Peoples. Millets present an opportunity for creative partnerships and innovation between researchers, farmers and Indigenous Peoples' communities that share knowledge about growing, processing, storing and marketing the grains to a wide range of consumers. The development of millets value chains should place family farmers and Indigenous Peoples at the centre, ensuring that they benefit from generating added value along the value chain.

Millets have untapped potential and can be used in innovative ways

Increasing production and developing value chains for millets can improve the diversity of the agrifood system while bringing income potential and innovation to rural communities around the world. Improving processing and storage practices can maximize the safe and effective use of millets and provide opportunities for small and medium-sized enterprises for postharvest and processing services. New innovative food products based on millets are also receiving more interest from consumers and they provide opportunities for entrepreneurs.

MILLETS SPECIES

Finger millet

Eleusine coracana

Originally from Sudan, finger millet is mainly grown in eastern Africa (Uganda, Kenya and the United Republic of Tanzania) and southern Asia (India and Nepal). While India is the largest producer of finger millet today, it is also cultivated in Ethiopia, Rwanda, Malawi, Sudan, Zambia and Zimbabwe to a lesser extent. Finger millet is high in thiamin, copper, magnesium, phosphorus and selenium. It is also a source of iron.

NUTRIENT VALUES (per 100 g edible portion, raw)*
CALORIES: 336 kcal
AVAILABLE CARBOHYDRATES: 67.3 g
PROTEIN: 6.7 g
FAT: 1.9 g[1]
DIETARY FIBRE: 11.2 g

Reference: 10 (id: A010)

Pearl millet

Pennisetum glaucum

Originating in West Africa, today pearl millet is distributed widely across the semi-arid tropics of Africa and Asia, and is primarily grown in sub-Saharan Africa. Pearl millet is high in copper, iron, magnesium, phosphorus, selenium and zinc. It is also a source of thiamin and vitamin B6.

NUTRIENT VALUES (per 100 g edible portion, raw)**
CALORIES: 366 kcal
AVAILABLE CARBOHYDRATES: 63 g
PROTEIN: 9.9 g (9.3 g–10.2 g)
FAT: 6.1 g (5.3 g–7.2 g)
DIETARY FIBRE: 9.5 g (8.8 g–11.5 g)

Reference: 9 (id: 01_032, 01_017); 10 (id: A003); 11 (id: 01025)

Foxtail millet

Setaria italica

Foxtail millet originated in northern China, before it spread to other parts of the world. Today, it is primarily grown in China, India, Afghanistan, Japan, the Democratic People's Republic of Korea, the Republic of Korea and Georgia. Foxtail millet is high in thiamin, pantothenic acid, copper, magnesium and phosphorus. It is a source of iron, niacin, Vitamin B6 and zinc.

NUTRIENT VALUES (per 100 g edible portion, raw)**
CALORIES: 356 kcal
AVAILABLE CARBOHYDRATES: 67.2 g
PROTEIN: 9.7 g (8.3 g–10.4 g)
FAT: 4.4 g
DIETARY FIBRE: 4.5 g (1.6 g–8.5 g)

Reference: 4 (id: 01-0006); 5 (id: 01-5-101); 8 (id: 01002)

Little millet

Panicum sumatrense

Evidence points towards the Indian peninsula as the origin of little millet. Today, it is mainly grown in India, Sri Lanka, Myanmar, Malaysia, Nepal and China. Little millet is high in copper, magnesium, selenium and is a source of thiamin, phosphorus and zinc.

NUTRIENT VALUES (per 100 g edible portion, raw)*
CALORIES: 353 kcal
AVAILABLE CARBOHYDRATES: 66.2 g
PROTEIN: 9.4 g
FAT: 3.9 g[1]
DIETARY FIBRE: 7.7 g

Reference: 10 (id: A016)

Teff

Eragrostis tef

Originally from Ethiopia, today teff is primarily grown in Ethiopia and Eritrea, where it is a major staple crop. It is also cultivated in the United States of America, South Africa, Australia, India and Kenya. Teff is high in thiamin, vitamin B6, copper, iron, magnesium, phosphorus, and is a source of riboflavin, niacin and pantothenic acid.

NUTRIENT VALUES (per 100 g edible portion, raw)*
CALORIES: 351 kcal
AVAILABLE CARBOHYDRATES: 66 g
PROTEIN: 12.4 g
FAT: 2.4 g
DIETARY FIBRE: 8.0 g

Reference: 6 (id: 169747)

Proso millet

Panicum miliaceum

The origins of proso millet go back to northern China. Today, it is mainly cultivated in China, India, Nepal, the Russian Federation, Ukraine, Belarus, the Near East, Türkiye, Romania and the United States of America. Proso millet is high in thiamin, copper, phosphorus, magnesium, zinc, and is a source of iron, selenium, riboflavin, niacin, pantothenic acid and vitamin B6.

NUTRIENT VALUES (per 100 g edible portion, raw)**
CALORIES: 350 kcal
AVAILABLE CARBOHYDRATES: 65.5 g
PROTEIN: 10.4 g (9.8 g–11.2 g)
FAT: 3.8 g (3.3 g–4.2 g)
DIETARY FIBRE: 6.2 g (1.6 g–8.5 g)

Reference: 4 (id: 01-0007); 5 (id: 01-9-002); 6 (id: 169702); 7; 8 (id: 01011)

* Mean values based on single data source.
** Mean values calculated based on several data sources.
[1] Value presented refers to the INFOODS component definitions <FATCE> or <FAT-> and differs from the standardized component of <FAT>.

Sorghum

Sorghum bicolor

The origins of sorghum cultivation were found in the eastern Sudanese savannah. Today, Nigeria, the United States of America and Sudan are the largest producers of sorghum globally. Sorghum is high in copper, magnesium, phosphorus and selenium, and is a source of iron, zinc, thiamin, niacin, pantothenic acid and vitamin B6.

NUTRIENT VALUES (per 100 g edible portion, raw)**
CALORIES: 345 kcal
AVAILABLE CARBOHYDRATES: 63 g
PROTEIN: 10.1 g (8.6 g–11.5 g)
FAT: 3.4 g (1.7 g–4.7 g)
DIETARY FIBRE: 10.7 g (6.3 g–14 g)

Reference: 4 (id: 01-0027); 8 (id: 01140); 9 (id: 01_039, 01_040, 01_041); 10 (id: A005); 11 (id: 01037, 01039); 12 (id: F008474)

Black fonio

Digitaria iburua

Originally from West Africa, today, black fonio is mainly produced in Nigeria and Niger, and is also cultivated in Benin, Cameroon, Côte d'Ivoire and Togo.

NUTRIENT VALUES (per 100 g edible portion, raw)**
CALORIES: 354 kcal
AVAILABLE CARBOHYDRATES: 70.2 g
PROTEIN: 7.8 g[2] (7.4 g–8.2 g)
FAT: 3.8 g[1] (3.5 g–4.4 g)
DIETARY FIBRE: 3.8 g[3] (1.6 g–6.2 g)

Reference: 3

Kodo millet

Paspalum scrobiculatum

Kodo millet originated in India. Today, kodo millet is primarily grown in damp habitats across the tropics and subtropics of the world. Kodo millet is high in magnesium and selenium, and is a source of thiamin, riboflavin, copper and zinc.

NUTRIENT VALUES (per 100 g edible portion, raw)*
CALORIES: 336 kcal
AVAILABLE CARBOHYDRATES: 66.8 g
PROTEIN: 8.3 g
FAT: 2.6 g[1]
DIETARY FIBRE: 6.4 g

Reference: 10 (id: A010)

White fonio

Digitaria exilis

The origins of white fonio point to West Africa. Today, white fonio is primarily grown in Guinea, followed by Nigeria, Mali, Burkina Faso, Côte d'Ivoire, Niger, Benin, Senegal and Guinea-Bissau. White fonio is high in copper and is a source of folate, magnesium, phosphorus and zinc.

NUTRIENT VALUES (per 100 g edible portion, raw)*
CALORIES: 356 kcal
AVAILABLE CARBOHYDRATES: 76.9 g
PROTEIN: 7.1 g
FAT: 1.7 g
DIETARY FIBRE: 2.2 g

Reference: 4 (id: 01_050)

Japanese barnyard millet

Echinochloa esculenta

The origins of barnyard millet are found in tropical Asia. Barnyard millet is widely cultivated in Asia, particularly in India, China, Japan, the Democratic People's Republic of Korea and the Republic of Korea. Barnyard millet is high in pantothenic acid, phosphorous and zinc. It is a source of thiamin, copper and magnesium.

NUTRIENT VALUES (per 100 g edible portion, raw)*
CALORIES: 351 kcal
AVAILABLE CARBOHYDRATES: 69.4 g
PROTEIN: 8.8 g
FAT: 3.3 g
DIETARY FIBRE: 4.3 g

Reference: 8 (id: 01139)

Job's tears

Coix lacryma-jobi

Job's tears are native to the Indo-Myanmar region. They are used as food and herbal medicine in Asian countries such as China, Japan, the Philippines, Myanmar, Thailand, Sri Lanka and India. Job's tears are high in copper, magnesium, phosphorus and zinc. They are also a source of iron and thiamin.

NUTRIENT VALUES (per 100 g edible portion, raw)**
CALORIES: 357 kcal
AVAILABLE CARBOHYDRATES: 67.7 g
PROTEIN: 13.4 g (11.8 g–15.8 g)
FAT: 2.9 g[1] (1.3 g–4.7 g)
DIETARY FIBRE: 3.1 g (0.6 g–5.5 g)

Reference: 1 (id: A008), 2, 5 (id: 01-9-008), 8 (id: 01138)

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* Mean values based on single data source.
** Mean values calculated based on several data sources.
[1] Value presented refers to the INFOODS component definitions <FATCE> or <FAT-> and differs from the standardized component of <FAT>.
[2] Protein values are not standardized.
[3] Value presented refers to the INFOODS component definitions <FIB-> and differs from the standardized component of <FIBTG>

INTERNATIONAL YEAR OF
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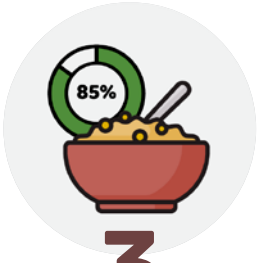
KEY FACTS ABOUT MILLETS

1

Millets are deeply rooted in ancient cultures and traditions of Indigenous Peoples.

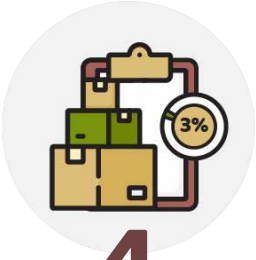
2

Finger millet, sorghum and pearl millets are among the most widely known millets.



3

Sub-Saharan Africa and South Asia account for more than 85 percent of millets consumption.



4

Millets account for less than 3 percent of the global grain trade.

5

China, India, Niger, Nigeria and Sudan are the world's biggest producers of millets.

6

Millets are a reliable source of carbohydrates, protein, fibre, vitamins and minerals, e.g. iron, calcium, magnesium, phosphorus and zinc.

7

Millets are gluten free with a low glycaemic index and rich in antioxidants.

The IYM communication campaign

The International Year of Millets was supported by a worldwide campaign targeting a diverse audience, from the media to government institutions, the private sector, farmers, civil society, educators, young people and the general public. Multilingualism was key to communicating key messages across a vast geographical area, engaging a global audience and mobilizing a critical mass to participate in the celebrations.

IYM WEBSITE

Launched in December 2022, the IYM website offers an extensive overview of the Year's objectives, themes, key messages, and a wealth of information and resources on millets. As a comprehensive knowledge repository and outreach tool, the website also provides free digital communication products to help promote millets.

VISUAL IDENTITY

The IYM campaign offered a comprehensive visual identity package, including user guidelines to ensure consistency across worldwide activities and maximize global impact. Digital assets included posters, event roll-up banners, virtual backgrounds, web buttons and illustrations available in the IYM Digital asset bank. The IYM visual identity is available in several formats, resolutions and languages.

IYM COMMUNICATION HANDBOOK AND TOOLKIT

The IYM Communication Handbook and Toolkit helped FAO offices, governments and external partners participate in the campaign.

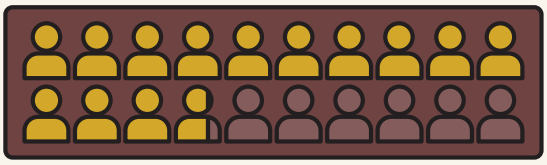
IYM OUTREACH IN NUMBERS

FAO shared

1500+

social media posts related to millets, reaching over

138 million users.



The IYM Website received over

320 000 visits

between 2022 and mid-2024.

International media outlets published over

2 250 articles

mentioning IYM and FAO.

FAO provided over

80

multilingual social media assets for dissemination.

IYM and FAO received more than

46 000

social media mentions.

Over

100 events

on millets were held in more than

35 countries.

The IYM visual identity was translated into at least

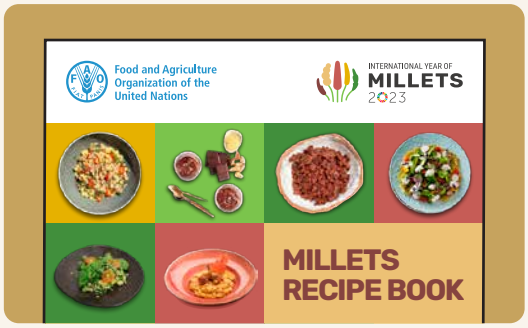
19 languages.

FAO published nearly

100 videos

on millets, generating around

50 000 views.



Chefs and hobby cooks across the globe shared over

250 millet recipes through a Global Chefs Challenge.

FAO shared the stories of

16 millet champions

around the world.

10 influencers

helped promote worldwide awareness of the many nutritious benefits of millets.

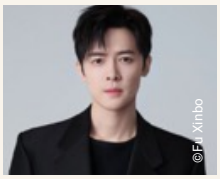
Chef Rodrigo Pacheco

Chefs Roca Brothers

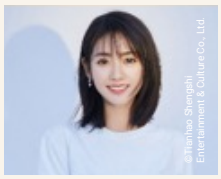
Chef Fatmata Binta

Chef Spicy Moustache

Chef Anahita Dhondy



Fu Xinbo



Xing Fei

Chef Pierre Thaim

Chef Bela Gil

Falu

VIDEOS

FAO produced various videos for the IYM. These can be found on a dedicated IYM YouTube playlist.

IYM promotional video

The IYM promotional video, available in Arabic, English, Spanish, French, Russian, Chinese, Italian, Turkish and Japanese.

"A taste of finger millet in India"

"A taste of finger millet in India" features a farmer and chef, who cultivate millets in eastern India, receiving planting materials and training from a nearby Community Seed Bank as part of an FAO Benefit-sharing Fund project.

"A Year in celebration of millets"

The many activities implemented during the IYM are highlighted in the video "A Year in celebration of millets".

"Millets are ..."

"Millets are..." brings together the opinions of experts about the central importance of millets

"A taste of pearl millet"

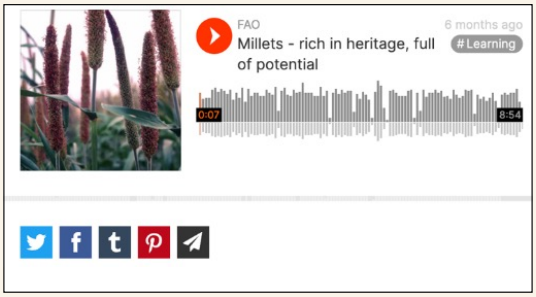
"A taste of pearl millet" engages with the guardians of crop diversity in Zimbabwe.

"Mahangu: The Story of Maria and Jonathon"

"Mahangu: The Story of Maria and Jonathon" tells the story behind the winning photo of the IYM photo contest.

PODCASTS

The IYM podcast took listeners on a captivating journey through the history of millets, their significance and impact on different countries. The podcast featured insights from Vilas Tonapi, Director of the Indian Institute of Millets Research, Makiko Taguchi, Agricultural Officer at FAO, and Fatmata Binta, chef and advocate for millets.



In a second podcast "The revival of ancient grains and the role of chefs in sustainable, plant-based cooking", Cassandra Quave discusses the rising interest in crop diversity and other trends on plant-based ingredients in gastronomy with chef Fatmata Binta. This episode is part of the 'Treaty Talks' podcast series.

Storytelling initiative: Millet champions

FAO selected 16 engaging stories from a worldwide campaign, putting a human face on the multiple benefits of millets and their critical importance for millions of lives and livelihoods. The stories are available in all UN languages.

Yumiko Otani
Japan

Awa Jagne
Gambia

Mamoutou Traoré
Mali

Josephine Okolodi
Kenya

Masse Gning
Senegal

Chef Mokgadi Itsweng
South Africa

Ahmet Alper Güner and Neriman Güner
Türkiye

Stefano Vecchi
Italy

Naima Dhore
United States of America

Tom Rakhis
Chad

Indigenous Grasslands for Grain team
Australia

Thais Barbosa dos Santos
Brazil

Anjamma Nadimidoddi
India

Haiqing Liu
China

Mariam Kouanda
Burkina Faso

Patrick Mutepeya
Zimbabwe

PHOTO CONTEST

IYM Photo Contest helped spread the word about the many benefits of millets, from their diversity to the variety of nutritious dishes made with millets, their ability to thrive on arid lands, and their market potential. FAO received around **800 submissions** from over **50 countries**.

An international jury, which included Magnum Photos Editorial Director Giulietta Palumbo and FAO photographers, agronomists and communication specialists, selected the winner and four runners-up, who vied for a second prize that was awarded through public voting on FAO social media accounts.

©Jonathon Rees

"Maria Nakumbwata harvests Pearl Millet in her homestead in northern Namibia"

The winning photo, taken by Jonathon Rees from South Africa, portrays Maria Nakumbwata as she harvests pearl millet after gathering Marula fruits in northern Namibia at the end of a good rainy season. Most Namibians rely on drought-resistant indigenous crops such as pearl millet, locally known as mahangu, for their nutrition and livelihoods.

“Role of women in millets conservation”

The second prize went to Raj Adhikari. His photo highlights the important role women play in the cultivation and conservation of millets, which hold a great cultural and nutritional significance for Nepalese people, especially in small rural villages.

“In a line”

Dibakar Roy’s photo depicts the drying of little millets at a mill in West Bengal, India, where millets are the main source of income.

"Guinea millets farming production"

Antricks Goodluck's photo features the cultivation of guinea millets on the Fouta Djallon plateau in north-western Guinea, a place where the crop is highly valued, and its soft seeds are ground into a flour used for various foods.

"Millets for health"

Satya Sainath's photo shows teachers in Telangana, India preparing the *Raagi laddu* millets dish as part of an early childhood care scheme that aims to enhance the dietary well-being of preschool kids, pregnant women and lactating mothers.

GLOBAL CHEFS CHALLENGE

In February 2023, the IYM Global Chefs Challenge was launched on Instagram in collaboration with chefs around the world to promote the Year and encourage people to include millets in their diets. Starting with chef Fatmata Binta, the challenge engaged many other chefs, hobby cooks and social media influencers who posted over 250 recipes on social media. FAO featured 23 submissions in the *Millets recipe book* and on the IYM website, in all six UN languages.


© Shridula Chatterjee

Pistachio and millets bliss balls
Shridula Chatterjee


© Max Mariola teams

Millet with mussels, peppers and chickpeas
Max Mariola


© Vanshika Bhatia

Sweet and savoury ragi churma
Vanshika Bhatia


© feminas22

Fonio salad
Fatmata Binta


© Sanjay Thakur

Pearl millet crêpe with avocado and pickle
Sanjay Thakur


©Anahita Dhondy

Navratri bruschetta
Anahita Dhondy


© Lari Lopez

Millet with vegetables and curry
Bel Coelho


© Iasmina Pasca

Millet tortillas with mushroom stuffing
Alessandro Vitale
(Spicy Moustache)


© Shreya Futela

Millet appe with fresh coconut chutney
Shreya Futela


© Pierre Thiam

Monique's caldou with fonio and sorrel-okra relish
Pierre Thiam


© Adhya S.

Finger millet smoothie
Adhya S.


© Roelene Prinsloo

Sorghum, orange and ginger cake
Mokgadi Itsweng

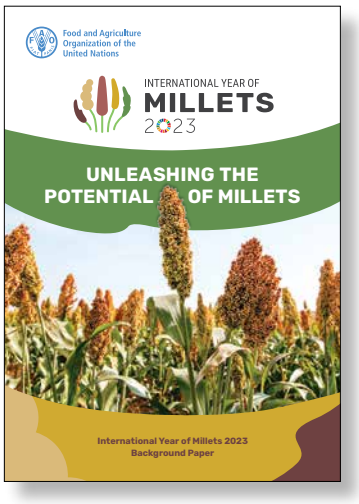
Knowledge sharing

The International Year of Millets facilitated knowledge-sharing between various stakeholders and attracted a global audience through a series of publications, webinars and events to inform and engage different actors, from policymakers and academia to the private sector and consumers. All outputs are available in the Resources section of the IYM website.

IYM PUBLICATIONS

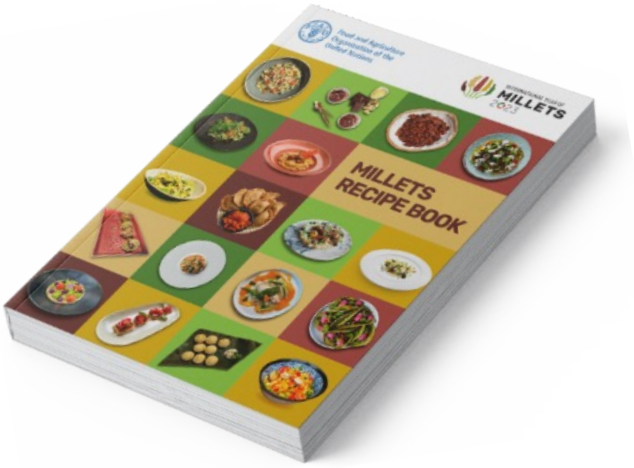
Unleashing the potential of millets – International Year of Millets 2023. Background paper

The IYM background paper, available in all six UN languages, includes a synopsis of the current status of millets worldwide. It aims to inspire policymakers, farmers, civil society, opinion leaders, research and development agents, and the general public to reconsider the role of millets in diversified and healthy diets.



Millets Recipe Book

Celebrating the IYM, FAO featured traditional and innovative millet recipes from the Global Chefs Challenge by chefs and hobby cooks around the world in this recipe book. It highlights the incredible versatility of these ancient grains and features unique millet creations from which to draw culinary inspiration. From starters to main courses, desserts and snacks, each recipe is a testament to the endless possibilities that millets hold. The recipe book is available in all six UN languages and in digital formats, including video recipes in the *Millets Recipe book*.

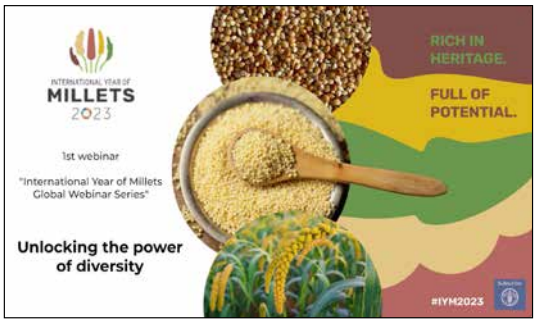


Millets in Russia

This publication in Russian covers a wide range of topics, including the history of the crop, detailed techniques for the cultivation of millets, comprehensive production data for Russia and globally, and a thorough analysis of world trade volumes in both the Russian and global markets. The brochure highlights the nutritional value of millets and its contribution to various diets worldwide. It also features a compilation of classic Russian recipes showcasing millet-based local dishes.

IYM WEBINAR SERIES

As part of the IYM celebration, FAO organized a six-part "IYM Global Webinar Series" with partners to shed light on the environmental, social and economic benefits of millets, their rich heritage and vast potential.



Webinar 1

"The role of sorghum and millets: Genetic resources in sustainable agriculture"

https://www.youtube.com/watch?v=v1w2cPaXPa8

Webinar 2

"Historical aspects of millets"

https://www.youtube.com/watch?v=TEiTV2b68Fs

Webinar 3

"Climate resilience of millets"

https://www.youtube.com/watch?v=VH0JD7XDFOA

Webinar 4

"Opportunities for processing millets"

https://youtu.be/u1vyxANIOsQ

Webinar 5

"Empowering farmers, Indigenous Peoples, women and youths: Unlocking the potentials of millets"

https://youtu.be/IBsZyAiJneA

Webinar 6

"Fonio: Enhancing collaboration for sustainable agriculture and improved livelihoods"

https://youtu.be/2Za-UtCy0RE

FAO partners conducted further webinars in support of the IYM. Some examples are listed below.

International Maize and Wheat Improvement Center

1. Unleashing the power of millets: innovations, challenges, and opportunities
2. The development of millet value chains and processing
3. Millet processing and progress on understanding pearl millet rancidity

North American Millets Alliance Webinar Series

1. Introduction to millets
2. Millets as ancient grains
3. Modern history of millets
4. Millets: Ideal crop for climate change
5. Processing millets
6. Millets as tasty grains
7. Millets as nutrition powerhouses
8. Millet products in markets today
9. Millets beverages
10. Millets in community and economic development
11. Millets and animal farming
12. Innovations in millets

Sustainable Development Solutions Network

1. History of millets
2. Sustainability of millets
3. Nutritional benefits of millets

Japan International Research Center for Agricultural Sciences seminar series: Millets - How to unlock their potentials to address nutritional, agricultural, and climate challenges

1. Part 1 – https://www.youtube.com/watch?v=bugdY7i8FJc
2. Part 2 – https://www.youtube.com/watch?v=dAVaktdShnE&t=6s
3. Part 3 – https://www.youtube.com/watch?v=7v9yaefW5Jw&t=1s
4. Part 4 – https://www.youtube.com/watch?v=LX3h6m9WUDo

NETWORKS

Various organizations provide platforms for discussion for all stakeholders involved or interested in the millets sector, such as farmers' organizations, cooperatives, civil society organizations, research centres, NGOs, policymakers, decision-makers and the private sector. Examples of such networks include the North American Millets Alliance (NAMA), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)'s Smart Food, the Sorghum United Global Forum and the International Center for Agricultural Research in the Dry Areas (ICARDA). These networks can facilitate information-sharing and collaboration on millets production and processing, best practices and lessons learned, projects, initiatives and programmes, relevant public policies, research and development, and innovation, among others.

Events

The International Year of Millets generated enormous interest around the world. Throughout the year, over 100 global, national, regional and local events were held in 35 countries to highlight the importance of millets and promote their sustainable production and consumption.

Opening ceremony

The launch of the IYM set the scene for an impactful year. On 6 December 2022, FAO hosted the opening ceremony paving the way for global, regional and national campaigns to spark interest in millets among stakeholders such as farmers, the youth and civil society, and push governments as well as policymakers to prioritize the production and trade in millets.

New Delhi conference

The Prime Minister of India, Shri Narendra Modi, opened the Global Millets (Shree Anna) Conference held in New Delhi in March 2023. The two-day global event raised awareness of millets, value chain development, health and nutritional aspects of millets, and research and development. Modi unveiled a coin and a stamp commemorating the IYM. This was followed by the digital launch of a book of millets standards.

'Dine on a Mat' event

At a 'Dine on a Mat' event with renowned chef Fatmata Binta held at the FAO Regional Office for Africa in Ghana in March 2023, millets were celebrated for their potential to address climate change, boost nutrition and increase farmers' incomes. Ambassadors, high commissioners, government ministers, UN and development partners and others took part in the event.

© FAO

IYM in Zimbabwe

In March 2023, visiting officials from Italy, FAO and the Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture joined Zimbabwean officials, civil society organizations and farmers to celebrate the IYM in Masvingo, Zimbabwe. The celebrations highlighted the many advantages of growing and consuming millets..


© Melissa Harvey

Global Sorghum Conference

In June 2023, the global sorghum community convened in Montpellier, France, for the 2023 Sorghum in the 21st Century Global Sorghum Conference. Organized by the French Agricultural Research Centre for International Development (CIRAD) and a consortium of global research and development institutions, the conference addressed challenges spanning the entire sorghum value chain to foster existing partnerships, forge new collaborations and explore pioneering advances in sorghum research.

© FAO/David Tsokar

Seminar in Nigeria

In July, FAO jointly organized an inaugural seminar in Abuja, Nigeria with the International Fund for Agricultural Development (IFAD), the World Food Programme (WFP) and the Federal Ministry of Agriculture and Rural Development of the Government of Nigeria to share knowledge and best practices on millets cultivation, processing and use. Nigeria is the third largest millets producer in the world, after India and China, and the leading producer in Africa, followed by Niger and Mali.

International Convention on Millets, India

The Government of Odisha organized the International Convention on Millets at Janta Maidan, Bhubaneswar, India on 10 November. The Convention explored how these ancient grains can address modern challenges. Through the Bhubaneswar Declaration, the Government of India and Odisha, FAO India, WFP, CGIAR, experts, civil society, farmer representatives and women self-help groups reaffirmed their vision to revive millets in farms and on plates.

All Africa Post-harvest Congress

The FAO "Sustainable postharvest management of millets for enhanced market opportunities and the well-being of people" side event at Fourth All Africa Postharvest Congress and Exhibition held in September 2023 focused on strategies to promote the production, consumption, postharvest management, processing, added value and trade of millets. The event explored strategies to achieve food security, improve nutrition and promote sustainable agriculture, while preserving the traditions and diversity of millets in Africa.

IGC Grains Conference

The International Grains Council (IGC) hosted the IGC Grains Conference in June. The event served as global platform for dialogue between policymakers and operators across the entire value chain.

IYM Master Chef Challenge

As part of World Food Forum's flagship event in October, FAO organized the IYM Master Chef Challenge. The event brought together chefs from around the world to participate in a live cooking challenge, showcasing millets' unique flavours, textures and their nutritional value. The event also launched the *Millets Recipe Book*, featuring chefs and recipes from the Global Chefs Challenge.

Global South Millet Convening

Agricultural leaders, policymakers and high-level representatives from the Global South gathered in Dubai, United Arab Emirates in March 2024, to chart a course for collective action beyond the IYM at the Global South Millet Convening. Key outcomes of the meeting included the development of plans for establishing Centres of Excellence for Millets in major millet-producing countries. The convening also reaffirmed a shared commitment to achieving the Sustainable Development Goals in the Global South, particularly through food security, poverty eradication and environmental sustainability.

IYM closing event

The IYM closing event was held in a hybrid format at FAO headquarters at the end of March 2024, reflecting on the many achievements of the Year. A roundtable focused on research and development of the millets sector, while a panel discussion shed light on how millets impact the life of small-scale producers, women, youth, Indigenous Peoples. The event also featured a speaker's corner, a cooking demonstration and the official closing ceremony. It provided an opportunity to take stock of the lessons learned from the co-creation and the sharing of knowledge through partnerships and networks during the Year and highlighted the outputs of the year-long observance. The closing event also determined the way forward for sustaining the momentum generated through the Year, especially with a view to achieving the UN 2030 Agenda for Sustainable Development.

A list of all events in celebration of the IYM can be found at https://www.fao.org/millets-2023/events/list/en.

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The way forward

The IYM empowered producers to make their voices heard and created the impetus for further action. FAO and its partners will continue to invest in millets as climate resilient crops, supporting farmers, nourishing people and improving their health, their livelihoods and the environment.

FAO ACTIONS AS PART OF THE IYM LEGACY

- Given the challenges posed by climate change when it comes to feeding a growing population, **neglected and underutilized species (NUS), including millets, present a vital opportunity for sustainable agrifood systems**. FAO's Committee on Agriculture (COAG) offers guidance on how to integrate NUS into action plans designed to implement FAO's thematic strategies on climate change, including the mainstreaming of biodiversity across agricultural sectors and the promotion of science and innovation. FAO also supports member countries in increasing resilience and adapting their agrifood systems to climate change by integrating NUS into crop production systems.

- FAO Members have included millets among the special agricultural products with unique qualities as part of the Global Action on "One Country One Priority Product". FAO works with the Government of Ethiopia to promote teff, with the Government of India to promote millets, and with the Government of Somalia and the Government of South Sudan to promote sorghum.

- The Drylands Sustainable Landscapes Impact Program, led by FAO and funded by GEF, adopts an **integrated approach to the millets sector in Zimbabwe and Namibia in order to achieve land degradation neutrality while sustaining and enhancing livelihoods**. It integrates three FAO flagship programmes and approaches into one technical and integrated support package as part of the "One FAO" approach: community seedbanks, Farmer Field Schools, and Forest and Farm Facilities. The lessons learned and good practices will be shared across and beyond the programme's regions to foster more resilient dryland landscapes and livelihoods.

- FAO supports the **sustainable intensification of millets production to improve food security and nutrition** in Asia and the Pacific, and Africa, providing technical assistance as part of the South-South Cooperation project with China in support of the Agricultural Sector Strategic Plan of Uganda.

- Together with the International Atomic Energy Agency, FAO has launched a **five-year multi-partner research programme** on genetic improvements aimed at better adapting pearl, finger and proso millets to climate change.

- FAO, the African Union and the US Department of State Special Envoy for Global Food Security are collaborating on the Vision for Adapted Crops and Soils (VACS). This joint initiative **promotes investment in the production and consumption of nutritious crops**, including fonio, as part of a healthy diet. It aims to protect natural resources, promote biodiversity and support the agricultural practices of Indigenous Peoples.

- In collaboration with chef Fatmata Binta, FAO launched a **new project to support women fonio producers in Ghana**. The pilot project provided specialized training to approximately 100 women involved in fonio cultivation, in order to improve their skills, productivity and income. Funded by FAO as part of a Technical Cooperation Project, the training included hands-on sessions dedicated to fonio production, harvesting, packaging and accessing markets. Following this pilot, the objective is to scale up the initiative and replicate it in other fonio-producing countries.

- Beyond the IYM, FAO remains committed to **maintaining the website, facilitating the Global Millets Community of Practice** to and fostering knowledge sharing between research institutes, civil society, the private sector, donors and governments.

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COLLABORATION AND PARTNERSHIP

Spurred by FAO's engagement and its provision of a neutral platform, as well as support from key collaborators, the IYM has raised global awareness of the contribution of millets to food security and nutrition, environmental sustainability and economic development. Building partnerships with the public and private sectors, and civil society, has been essential in enabling knowledge sharing, sustainable production practices and better access to markets.

Following the IYM, there is further scope for potential collaboration between FAO, ICRISAT, ICARDA, and the International Center for Biosaline Agriculture (ICBA) on various critical fronts. Partnership opportunities include joint initiatives designed to ensure equitable access to quality seeds, equip smallholder farmers with gender-sensitive technologies, integrate millets in dietary guidelines, invest in research and policy, and establish global networks for information sharing. Such collaborations will drive millets innovation, bridging tradition and modernity to ensure long-term agricultural sustainability and food security.

IFAD will continue to support national governments investing in developing new millets varieties that are nutrient dense, pest and disease resistant and climate adapted; local and private sector seed systems for disseminating millets varieties preferred by farmers; and infrastructure and policy frameworks that support millets value chains.

The International Grains Council (IGC) is an intergovernmental organization dedicated to enhancing international cooperation in grain trade and promoting market stability and global food security. In 2023, the IGC contributed a report on millets to the IYM, presented at their annual conference. The IYM has created several opportunities for a continued collaboration between the IGC and FAO. The IGC plans to improve its statistical data on millets production and trade, updating and sharing this information twice a year. Moreover, the IGC plans to establish a global network for information sharing with the private sector. This collaboration aims to improve millets-related market information, linking traditional

practices with trade opportunities to benefit local populations and foster economic development.

In November 2023, the Bill and Melinda Gates Foundation organized a workshop in Senegal entitled, ''Bottlenecks to Expansion of Pearl Millet in Africa', in collaboration with the International Maize and Wheat Improvement Center (CIMMYT) and the Senegalese Institute of Agricultural Research (ISRA). This event targeted the research and development community in Africa to assess the needs in millets breeding and value chain development across the continent. As a result, the foundation is supporting the "Africa is Millets" initiative to facilitate knowledge sharing among African stakeholders, and has recognized the need for investments in millets processing facilities in West Africa. FAO will continue to engage with this initiative and explore further collaboration opportunities.

The Indian Institute of Millets Research (IIMR) is committed to sharing its extensive experience in boosting the millets sector in India through entrepreneurship. In collaboration with FAO and ICRISAT, IIMR will share experiences and lessons learned with African research organizations. This includes field practices, harvesting and postharvesting technologies to build robust value chains, providing consumers with a variety of nutritious millets-based ingredients and products that appeal to young people and urban dwellers.

The Forum for Agricultural Research in Africa (FARA) is committed to assisting science and research institutions in fostering innovations that can improve the livelihoods of African people. FARA recognizes the potential of indigenous crops such as millets to provide a solution to changes in climate, particularly where introduced crops like maize are failing – for example, in eastern and southern Africa. Recognizing the importance of robust seed systems, the FARA advocates for public regulation to ensure that quality standards are met, while supporting a thriving private sector that provides competitive and affordable seeds, other inputs and services.

Following the IYM, the Asia-Pacific Association of Agricultural Research Institution (APAARI) will enhance its focus on millet-related activities conducted by its members across Asia and the Pacific. In collaboration with the Odisha Millet Mission in India, the APAARI and regional experts are developing a Foundation Guide on Millets. In addition, an initiative is underway to facilitate millet seed and grain trade between countries in the region, while ensuring global WTO sanitary and phytosanitary standards. APAARI is also launching a major agroecology project featuring millets as a key crop, funded by the European Union.

Recommendations

Research on and development of the millets sector is essential to address knowledge gaps, develop new varieties and ensure the conservation, characterization and utilization of genetic diversity.

Improving knowledge sharing and technical networks is crucial for placing family farmers, women and the communities of Indigenous Peoples centre-stage in the future of the millets sector and recognizing their knowledge systems, which have evolved over generations. The sector requires policies that promote an enabling environment that allows to develop technical expertise along the value chain. Creating networks to foster innovation, collaboration, and knowledge sharing is imperative for improving production and market access, developing more resilient varieties and increasing consumer demand for millets.

The following recommendations outline strategic interventions aimed at unlocking the potential of the millets sector by conserving genetic resources, promoting sustainable production and mechanization, enhancing millets consumption and healthy diets, and fostering research and development through collaborative efforts, regulations and public–private partnerships.

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1 GENETIC RESOURCES

- Conserve the genetic diversity of millets by encouraging countries and actors in the millets value chains to support the collection, conservation, characterization and access to genetic resources. Facilitate benefit sharing through public–private partnerships.
- Design and implement regulations and standards to promote the contributions of family farmers and Indigenous Peoples in the conservation, use and improvement of millets genetic resources. Their traditional knowledge of local environments, farming practices and cultural preferences is crucial for developing diverse and resilient millets value chains that sustain livelihoods and enhance food security.
- Strengthen sustainable seed conservation systems locally and facilitate access to millets materials held in national and international public collections. This access should be available to farmers, including family farmers, Indigenous Peoples and plant breeders for research and plant breeding purposes. Indigenous Peoples often maintain community seed banks where diverse millets varieties are stored and exchanged, serving as vital resources for sharing seeds and genetic material, and promoting diversity in millets cultivation.
- Ensure national and international gene banks are connected through functional networks facilitating the active selection and distribution of appropriate options for farmers and Indigenous Peoples.
- Improve favourable traits through targeted breeding programmes. Focus on traits such as non-shattering, lodging resistance, stem drying at harvest, palatability, drought, heat and salt tolerance, nutrient contents and bioavailability, and resistance to pests and disease
- Strengthen seed supply systems to ensure farmers can access options suited to their environment, climate and market preferences.

2 SUSTAINABLE PRODUCTION AND INTEGRATED CROPPING SYSTEMS

- Incentivize farmers to diversify their production systems and conserve underutilized millets varieties and landraces.
- Promote sustainable agricultural practices, such as crop rotation with dryland grain legumes and leguminous trees, water-saving techniques and crop insurance to improve cultivation and ensure the long-term viability of millets farming.
- Support initiatives targeting smallholder farmers and Indigenous Peoples' communities to improve the harvesting and storage of millets using gender-sensitive technologies. Promote access to natural resources (land and inputs), financial resources, agricultural advice and mechanization for women and other vulnerable groups. Focus on reducing drudgery in land preparation, direct seeding, weeding, harvesting, storage and processing. Provide training opportunities and improve their access to markets.

3 MECHANIZATION AND FOOD PROCESSING OPPORTUNITIES

- Create small business development grants for millets entrepreneurs, including small and medium-sized enterprises (SMEs), involved in mechanization and food processing. These grants should provide financial assistance to offset the costs of starting a business, equipment procurement, infrastructure development and marketing initiatives, with a focus on supporting initiatives by women and marginalized groups.
- Promote mechanization support and gender empowerment by allocating resources for the acquisition and dissemination of appropriate technologies tailored to millets cultivation and processing. Provide training and capacity-building programmes to ensure the effective use of mechanical equipment, particularly for women farmers who often bear the brunt of agricultural labour. Promote gender-inclusive access to mechanization services to reduce drudgery and enhance productivity.

- Encourage the integration of millets flour into products based on wheat, rice, maize and other flours through substitution, thereby reducing reliance on imports and increasing demand for local millets value chains. Develop food technologies and processing techniques that preserve the nutritional integrity of millets, while increasing their incorporation into diverse food products. Support research and innovation initiatives focused on creating millet-based food formulations suitable for a diverse range of new consumers, such as urban populations.
- Foster links between millets entrepreneurs and retailers, food service providers and institutional buyers to ensure market access and product uptake. Promote branding and marketing strategies that highlight the nutritional, cultural and environmental benefits of millet-based products.
- Support the creation of aggregation centres or collection points where farmers can consolidate their millets harvests for processing, packaging and distribution. Invest in small-scale processing facilities equipped with milling machines, grain cleaners and packaging equipment to add value to millets products and respond to consumer preferences.

4 SUSTAINABLE CONSUMPTION AND HEALTHY DIETS

- Promote millets consumption as part of a healthy diet through public procurement and distribution by investing in establishing storage and distribution networks.
- Launch public nutrition and communication campaigns to highlight the health benefits of millets and their potential in combating malnutrition and food security challenges.
- Introduce millet-based meals in school lunch programmes to expose children to the benefits of millets from an early age, fostering a lifelong appreciation for these grains.
- Encourage researchers to develop databases with up-to-date analytical information on the food composition of all millets species to fully understand their nutritional contents, bioavailability and potential to address emerging food and nutrition challenges.
- Foster producer cooperatives or associations among millets farmers in rural areas to facilitate collective marketing, bulk purchasing of inputs and shared transportation, thereby reducing costs and increasing market access for small-scale producers.

- Encourage the establishment of farmers' markets or weekly market days in both urban and rural areas where local producers can directly sell their millets products to consumers. Provide support for infrastructure development, marketing initiatives and regulatory frameworks to ensure the quality and safety of products.
- Forge partnerships with local retailers, including supermarkets, grocery stores and convenience stores, to stock millets products. Provide incentives such as promotional discounts, product demonstrations and marketing support to encourage retailers to prioritize millets sales and educate consumers about their nutritional benefits.
- Leverage mobile and digital technologies to connect millets producers with consumers through online marketplaces, mobile applications and e-commerce platforms. Facilitate direct sales and home delivery services, allowing consumers to conveniently purchase millets products using their smartphones or computers.

5 RESEARCH AND DEVELOPMENT AND KNOWLEDGE EXCHANGE

- Develop open-access knowledge hubs and technical networks facilitating knowledge exchange about research and development on millets varieties, production, mechanization, postharvest handling, marketing, processing, value addition, nutrition and health benefits.
- Develop a global information system on millets, linking existing millets databases with information related to community of practices, community organizations and networks of Indigenous Peoples, researchers, governments, universities, farmers and women's organizations.
- Establish a network of stakeholders, including government agencies, research institutions, civil society organizations and private sector actors, to strengthen the millets sector. This network should facilitate knowledge sharing, technology transfer, capacity building and policy dialogue, with support from FAO and its Members by using platforms such as the Committee on Agriculture (COAG) and Conference of Parties (COP) to promote the inclusive and sustainable development of millets.

©Ranarison Livatina

A new era for millets

The IYM has demonstrated the significant benefits of promoting sustainable and resilient millets value chains, highlighting their potential to create new market opportunities for farmers and producers while offering innovative products to consumers.

The sustainability and resilience of our food supply are a shared responsibility, encompassing governments, private-sector companies and the general public—including farmers, traders, chefs, home cooks and the youth. Together, we can unlock the full potential of millets to improve human and planetary health and well-being, and to bring about the transformation of our agrifood systems.

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ANNEX: IYM STEERING COMMITTEE

CONSTITUENCY	NAME AND TITLE	STATUS
Africa	**Yaya Adisa Olaitan Olaniran** Permanent Representative to FAO **The Federal Republic of Nigeria**	Vice-Chairperson
Africa	**Phyllis Mends** Alternate Permanent Representative to FAO **The Republic of Ghana**	Alternate
Asia	**Jujjavarapu Balaji** Minister of Agriculture Designate **The Republic of India** **Neena Malhotra** **Ambassador** Permanent Representative to FAO **The Republic of India** **Amararam Gurjar** Deputy Chief of Mission **The Republic of India**	Chairperson
Asia	**Shubha Thakur** Joint Secretary Department of Agriculture & Farmers Welfare **The Republic of India**	Observer
Europe	**Stefania Costanza** Deputy Permanent Representative Permanent Representation to UN Agencies in Rome **The Republic of Italy**	Member
Europe	**Marie Lise Stoll** Deputy Permanent Representative to FAO **The Grand Duchy of Luxembourg**	Alternate
Europe	**Filiberto Altobelli** Permanent Representative of the Republic of Italy Research Centre for Agricultural Policies and Bioeconomy Council for Agricultural Research and Economics **(CREA)**	Observer
Latin America and the Caribbean	**Moira Vargas Francisco** Counsellor – Alternate Permanent Representative to FAO **The Dominican Republic**	Member
Latin America and the Caribbean	**Any Lam Chong** Deputy Permanent Representative to FAO **The Republic of Panama**	Alternate
Latin America and the Caribbean	**Tomás Alberto Duncan Jurado** Permanent Representative to FAO **The Republic of Panama**	Observer
Latin America and the Caribbean	**Bettina Carbone Stanziola** Alternate Representative to the Rome-based UN agencies **The Republic of Panama**	Observer
Near East and North Africa	**Mina Rizk** Permanent Representative to FAO **The Arab Republic of Egypt**	Member
Near East and North Africa	**Saadia Elmubarak Ahmed Daak** Permanent Representative to FAO **The Republic of the Sudan**	Alternate
North America	**Stefano Mifsud** Office Manager – United States Department of Agriculture US Mission to the UN Agencies in Rome **The United States of America**	Member
North America	**Julie Emond** Counsellor – Agriculture and Food Canadian Embassy in Italy – Permanent Mission to the Food and Agriculture Agencies **Canada**	Alternate
Southwest Pacific	**Emma Hatcher** Counsellor **Australia**	Member

CONSTITUENCY	NAME AND TITLE	STATUS
Southwest Pacific	**Jenny Reid** Counsellor – Primary Industries **New Zealand**	Alternate
Stakeholder	**Jacqueline Hughes** Director-General International Crops Research Institute for the Semi-Arid Tropics (**ICRISAT**)	Vice-Chairperson
Stakeholder	**Aggrey Agumya** Executive Director Forum for Agricultural Research in Africa (**FARA**)	Member
Stakeholder	**Ravi Khetarpal** Asia-Pacific Association of Agricultural Research Institution (**APAARI**)	Member
Stakeholder	**Xianmin Diao** Chief Scientist of Millets Institute of Crop Science Chinese Academy of Agricultural Sciences (**CAAS**)	Member
Stakeholder	**Robert Delve** Lead Global Technical Advisor – Agronomy Sustainable Production, Markets and Institutions Division Strategy and Knowledge Department International Fund for Agricultural Development (**IFAD**)	Member
Stakeholder	**Arnaud Petit** Executive Director International Grains Council (**IGC**)	Member
Stakeholder	**Laura Lorenzo** Director World Rural Forum (**WRF**)	Member
Stakeholder	**Ramesh Sharma** National Convenor **Ekta Parishad**	Member

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Disclaimers and points to be considered when interpreting the results

- The nutrient values refer to 100 g edible portion on fresh weight basis of raw, uncooked grains.
- Nutrient contents can vary due to factors such as soil, climate, food genetics, agricultural production systems, storage, food processing techniques, food preparation, and others.
- Best practices and international standards were used to compile the nutrient profiles, but ambiguities in identifying foods (i.e. whole grains vs. processed grains) may impact nutrient levels, especially fibre content.
- Data harmonization was carried out for most components, but due to missing information in data sources some values have been marked to indicate they are not directly comparable with others.

Values were calculated using the following equations

- Energy (kcal/100 g) was calculated using FAO energy conversion factors: carbohydrates, 4 kcal/g; protein, 4 kcal/g; fat, 9 kcal/g; dietary fibre, 2 kcal/g.
- Available carbohydrates (g/100 g) were calculated by difference as follows: 100 - (water + ash + fat + protein + fibre).
- Protein was calculated from total nitrogen using nitrogen-to-protein conversion factor 5.83 for all species (except for sorghum factor 6.25 was applied), according to FAO/INFOODS Guidelines.

Millets have been cultivated for thousands of years across diverse cultures and continents. In recognition of their resilience, diversity and nutritional benefits, the United Nations General Assembly declared 2023 the International Year of Millets (IYM), acknowledging their potential to enhance food security and nutrition, and transform food systems across nations.

This report highlights the significant impact of IYM in raising awareness and directing policy attention towards millets, promoting their nutritional benefits, their adaptability to adverse and changing climatic conditions, and creating opportunities for economic growth and innovation. It summarizes the Year's key objectives, activities, legacy and recommendations, with the goal of inspiring stakeholders to embark on a new era dedicated to promoting the sustainable production and consumption of millets.

International Year of Millets 2023
www.fao.org/millets-2023

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