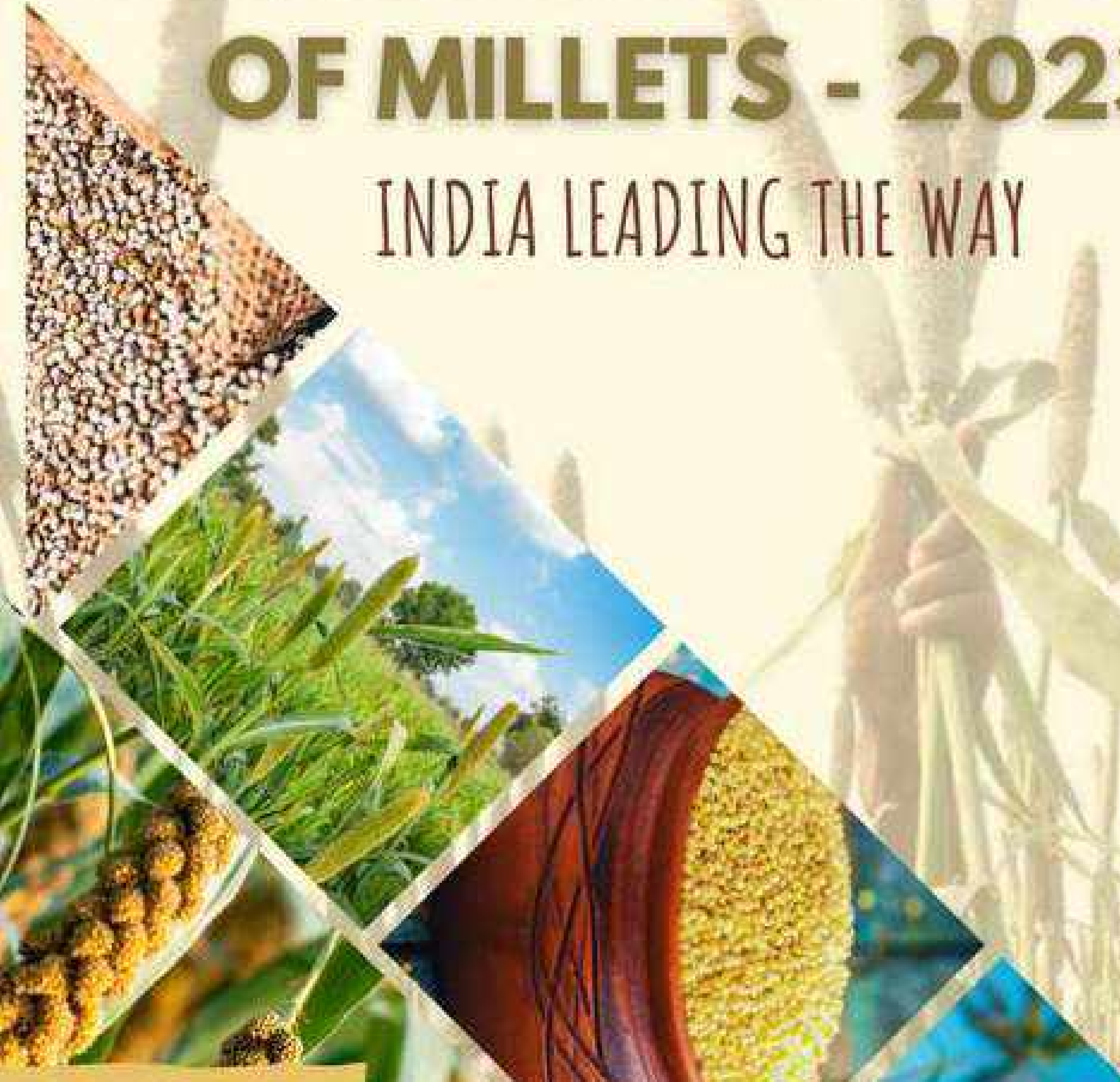
MILIEU– 2023

INTERNATIONAL YEAR OF MILLETS - 2023

INDIA LEADING THE WAY



E- MAGAZINE

PRESENTED BY:

DEPARTMENT OF GEOGRAPHY

SHYAMA PRASAD MUKHERJI COLLEGE FOR WOMEN

UNIVERSITY OF DELHI

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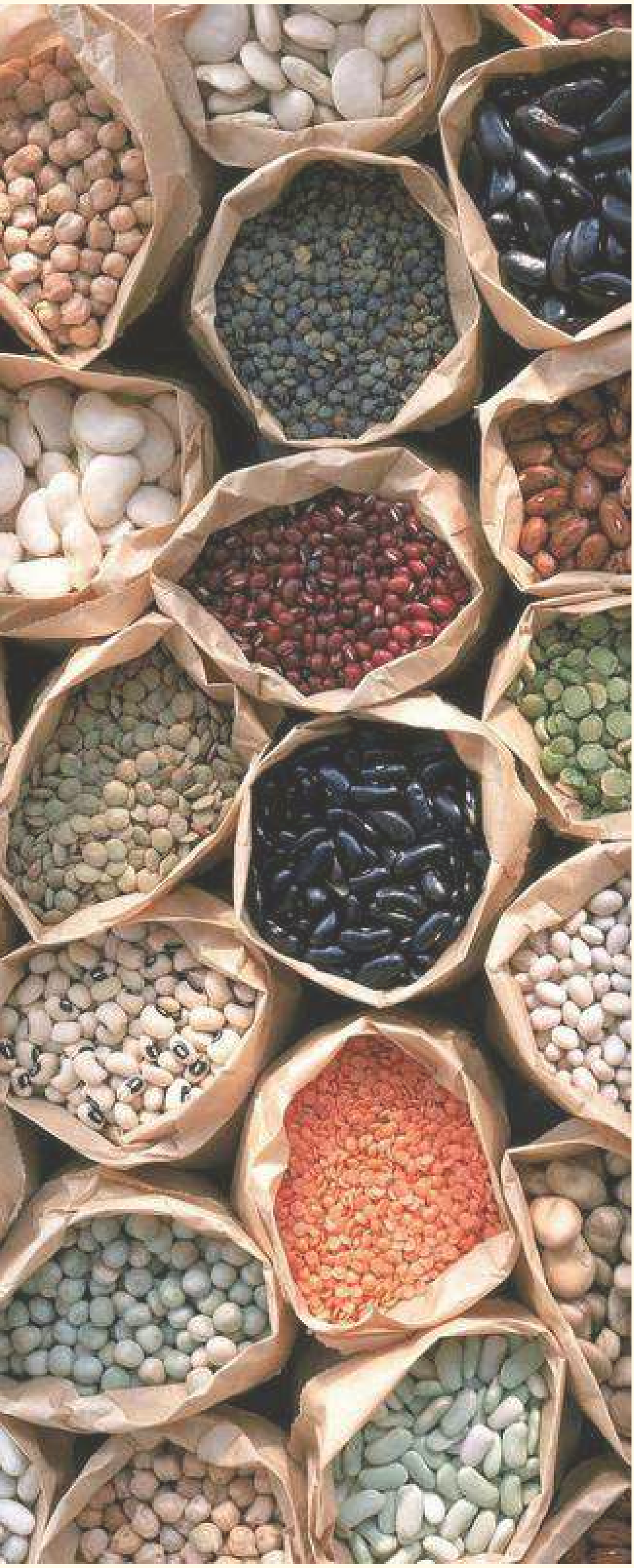

POEMS

Aastha

Sneha Rani

Jyoti Yadav

Akshara Sharma

Prabha

Mansi

Riya Pandey

Kanchan Devi

POSTERS

Nandini

Himani Bal

Poonam

Aarushi Sapra

Bhavya Mangla

Nandini

Pallavi Pardhi

Jyoti Yadav

Tannu Singh

Sakshi

Anshika Singh

Neesha

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From the Principal's Desk

With the aim to create awareness and increase the production and consumption of millets, the United Nations, at the behest of the Government of India, declared 2023 the International year of Millets. FAO is the lead agency for celebrating the Year in collaboration with other relevant stakeholders. Millets can grow on arid lands with minimal inputs and are resilient to changes in the climate. They are, therefore, an ideal solution for countries to increase self-sufficiency and reduce reliance on imported cereal grains.

I congratulate the Department of Geography to make Millets a theme of their E-Magazine. I hope that the editorial team will contribute in spreading this message that everyone must make the Millets, part of their regular food. I wish you all the best for the success of this issue of the Magazine.

Prof. Sadhna Sharma
Principal

FROM THE TEACHER - IN - CHARGE'S DESK

Dear Readers,

As we continue to learn about the importance of sustainable agriculture and healthy eating habits, it is important to recognize the potential of a humble yet versatile crop: Millets. On India's proposal, the United Nations has declared 2023 as the 'International Year of Millets' and has set the tone for increasing the area under cultivation of millets across the world. India, which is the world's largest producer of millets is taking wide-ranging steps to implement the benefits of this opportunity. India had a share of around 41 percent of the total world production of millets in 2020. Millets are incredible ancestral crops with high nutritional value. All cereals are a rich source of carbohydrates but millets also come with more protein, dietary fiber, iron, and calcium. Millets are even considered to be climate-friendly as they use 70% less water than rice; grow in half the time as wheat; and need 40% less energy in processing. Millets can play an important role and contribute to our collective efforts to empower smallholder farmers, increase the country's food security, achieve sustainable development, eliminate hunger, adapt to climate change, promote biodiversity, and transform agri-food systems.

As members of SPM College, we have the opportunity to learn about and promote sustainable practices. With this objective, the Department of Geography has taken a small step in this direction by raising awareness amongst the students about the advantages of millets and its many nutrients. It gives me immense pleasure to inaugurate the sixth issue of the annual E-Magazine "Milieu" of the Department of Geography, SPM College. The theme of our magazine- "International Year of Millets: India Leading the Way" is very relevant and in alliance with the need of the hour.

I am confident that this student activity with contents envisioned and written by the students themselves will provide an insider view on everything ranging from creativity of the students to events and profiles. This has been possible by the continuous support and guidance of our college Principal, hard work put by the faculty and passion and zeal of our young and bright girls.

Lastly, I congratulate the editorial team and contributors for their efforts in bringing out this valuable publication. I hope the publication will be read and used widely .

Best of Luck !!

Dr. Rachna Dua

Teacher- In – charge

Message from the Convener

‘कृषिर्धन्या कृषिर्मेध्या जन्तूनां जीवनं कृषि:’ अर्थात् कृषि सम्पत्ति और मेधा प्रदान करती है और कृषि ही मानव जीवन का आधार है। भारतीय सभ्यता एक सर्वांगसंपूर्ण सभ्यता है तथा कृषि व्यवस्था उसका एक महत्वपूर्ण अंग है इसीलिए हमारी भारतभूमि को ‘सुजलाम सुफलाम’ भी कहा जाता हैI भारतवर्ष ने सम्पूर्ण विश्व को कृषिकर्म का बोध कराया है तथा पुरातन भारतवर्ष के समृद्धि का आधार कृषि व्यवस्था ही थीI देश की राष्ट्रीय अर्थव्यवस्था में कृषि का अत्यंत ही सकारात्मक महत्व एवं योगदान है। देश की कुल श्रम शक्ति का आधा हिस्सा कृषि क्षेत्र से संबंधित है। देश के प्रमुख, लघु एवं कुटीर उद्योग-धंधों को कच्चा माल कृषि क्षेत्र से ही प्राप्त होता है तथा देश से निर्यात की जाने वाली वस्तुओं में लगभग 15 से 20 प्रतिशत कृषि वस्तुओं का अनुपात होता है साथ ही देश की राष्ट्रीय अर्थव्यवस्था (सकल घरेलू उत्पाद) में कृषि क्षेत्र के योगदान उल्लेखनीय हैI

परंपरागत भारतीय थाल में मोटे अनाज जैसे ज्वार बाजरा, रागी (मडुआ), झंगोरा, बैरी, कंगनी, कुटकी (लघु धान्य), कोदो,चीना, सामा या सांवा और जौ का एक महत्वपूर्ण स्थान रहा हैI इन मोटेअनाजों के उत्पादन का साक्ष्य सिंधु घाटी सभ्यता से मिलता है, यजुर्वेद तथा सुश्रुत संहिता जैसे ग्रंथों में भी मोटेअनाज तथा इनके अनेक लाभों का उल्लेख मिलता है तथा वर्तमान में भी इनके पोषक तत्वों की अधिकता के कारण इन्हें ‘सुपरफूड’ के नाम से नवाज़ा गया हैI

मोटे अनाजों का प्रयोगलंबे समय से विश्व के अर्ध शुष्क क्षेत्रों में पारम्परिक आहार के रूप में किया जाता रहा हैI हरित क्रांति के उपरांतभारत में गेहूं और चावल जैसे अनाजों का प्रचलन बढ़ा जिससे इन मोटे अनाजों के कृषि कार्य हेतु उपलब्ध भूमि तथा उत्पादन दोनों में कमी आई जिसके बाद एक लम्बे समय तक बाजार में इनकी उपलब्धता तथा इनके प्रति जागरूकता का अभाव रहा साथ ही इनकी कृषि में नई तकनीकों का प्रयोग तथा सरकारी सहायता भी नाममात्र की रही जिससे इनकी पैदावार कम होती चली गई और ये अनाज निम्न तथा मध्यमवर्गकी थाली से गायब हो गए साथ ही लंबे समय तक पारम्परिक तरीके से कृषि इनके उत्पादन में कमी का प्रमुख कारण हैI

जहाँ विश्व के अधिकतरदेश पिछले कुछ दशकों से पानी की कमी से जूझ रहे हैं वहां इनका अधिक उत्पादन एक बड़ी आबादी के पोषण का अच्छा विकल्प हो सकता है, इन अनाजोंको दूसरी फ़सलों के अपेक्षा पानी की आवश्यकता कम होती है साथ ही इन फसलों के अवशेष पशुओं के चारे के रूप में प्रयुक्त होते हैं जिससे परली की समस्या भी नहीं होतीI इन अनाजों का उत्पादन ज्यादातर परंपरागत कृषि के माध्यम से ही होता है जो मृदा तथा पर्यावरण संरक्षण की दृष्टि से भी अनुकूल है परन्तु इन मोटे अनाजों की कृषि में आधुनिक तकनीकों का समावेश इन अनाजों के उत्पादन में क्रांति ला सकता है जो जलवायु परिवर्तन के कारण होने वाले बेमौसम बरसात से होने वाले नुकसान को काम करने में भी सहायक होंगेI इन 'क्लाइमेट स्मार्ट क्रॉप्स' का प्रतिदिन के खान- पान में प्रयोग इन अर्धशुष्क क्षेत्रों में कुपोषण को नियंत्रण करने में मदद करेगा साथ ही वर्त्तमान में अत्याधिक प्रचलित नई तकनीकों के साथ जैविक कृषि के माध्यम से इनका उत्पादन किसानों के लिए फायदे का सौदा हो सकता हैं

इन अनाजोंको सम्पूर्ण विश्व में सार्वजनिक समर्थन की आवश्यकता है जिससे इनकी कृषि को बढ़ावा मिलेगाI भारत में भी इन अनाजों के बारे में जनमानस को जागरूक करने की आवश्यकता हैI सार्वजिक वितरण प्रणाली तथा विद्यालयों में दिए जाने वाले मध्याह्न भोजन में इनका प्रयोग भारत में कुपोषण कम करने में कारगर सिद्ध होगा साथ ही ई - कॉमर्स साइट्स पर इनकी उपलब्धता भी प्रचार का अच्छा माध्यम हो सकती हैI 'राष्ट्रीय मिलेट्स मिशन' जैसे सरकारी प्रयास भी इसके उत्पादन तथा प्रचार में सहायक होंगेI भारतवर्ष इस क्रांति का ध्वजवाहक है साथ ही इन मोटे अनाजों का सबसे बड़ा उत्पादक भी जिससे यह सम्पूर्ण विश्व को इन अनाजों के पर्यावरणीय लाभ, सतत कृषि का प्रचारतथा इनके उपयोग से होने वाले सार्वजनिक स्वास्थ्य में सुधार जैसे महत्वपूर्ण मुद्दों पर सम्पूर्ण विश्व को नई राह दिखा सकता हैI

हमारी ई-पत्रिका ' MILIEU ' के छठे संस्करण में प्रकाशित लेखों तथा अन्य रचनाओं का लेखन तथा संकलन दिल्ली विश्वविद्यालय के विभिन्न महाविद्यालयों के विद्यार्थियों के द्वारा किया गया है जो इस विषय पर उनकी समझ तथा रचनात्मकता को परिलक्षित करता है साथ ही मैं आशा करता हूँ कि इस ई-पत्रिका के माध्यमसे उपरोक्त विषय के विभिन्न आयामों को रोचक ढंग से पढ़ने तथा समझने में मदद मिलेगीI मैं अपने महाविद्यालय की प्राचार्या प्रो साधना शर्मा तथा विभागाध्यक्षा डॉ रचना दुआ को उनके निरंतर सहयोग, प्रोत्साहन तथा मार्गदर्शन के लिए धन्यवाद देता हूँ साथ ही सम्पादकीय समूह के सदस्यों तथा अन्य रचनाकारों को भी इस ई-पत्रिका के प्रकाशनमें सहयोग के लिए धन्यवाद ज्ञापित करता हूँI

शुभकामनाओं सहित,

शशांक सिंह

Message from the Co-Convener

Greetings Everyone,
It gives me immense pleasure to bring forth the sixth edition of our annual E-Magazine "MILIEU".

Let’s meet Millets which belong to the Grass Family and are defined as small, annual warm-weather cereals. Jowar (Sorghum), Bajra (Pearl Millet), and Ragi (Finger millet) are the other important millets cultivated in India and gradually lost their presence in kitchens worldwide. As our earth is experiencing global temperature rise and other climatic episodes, food security concerns become an area of concern. Feeding the 7.2 billion global population now seems to be a massive task, here reintroducing millets to our plates again will be key to combatting climate change and its implications on crop production. Observing the huge potential of Millets, which aligns with several UN Sustainable Development Goals (SDGs), the Government of India (GoI) has prioritized Millets.

I would like to express my gratitude to our Principal Prof. Sadhna Sharma for her support and to our Teacher-in-charge, Dr. Rachna Dua for her constant guidance. I believe this magazine will bring to you many unknown facts. I congratulate the entire team.
Best wishes
Dr. Ankur Srivastava

Message from the Editor

As we approach the year 2023, the world is gearing up to observe the International Year of Millets. India, being one of the largest producers and consumers of millet, has taken the lead in promoting and popularizing this traditional grain. Millets have been an integral part of Indian cuisine and culture for centuries. However, with the advent of modern farming practices and the promotion of high-yielding crops, millets were pushed to the sidelines. This resulted in a decline in the cultivation and consumption of millets, leading to their loss of popularity. The International Year of Millets 2023 aims to bring back the lost glory of millets and promote their nutritional and ecological benefits. India has been at the forefront of this initiative, with the government launching several schemes to promote millet cultivation and consumption.

Let us join hands in promoting the consumption of this traditional grain and help create a healthier and more sustainable world. The year 2023 has been declared the International Year of Millets, with India taking the lead in promoting this traditional grain. Millets have been an essential part of Indian cuisine and culture for centuries, but with the rise of modern farming practices, they have been overshadowed by other crops. However, with the promotion of sustainable farming practices and the recognition of the nutritional and ecological benefits of millet, they are now making a comeback.

Out of the many schemes initiated, one of them is the National Mission for Sustainable Agriculture, which encourages farmers to adopt sustainable farming practices and cultivate millets. The benefits of millet are numerous. They are highly nutritious, containing high amounts of protein, fiber, and minerals. They are also gluten-free, making them a great alternative for those with celiac disease or gluten intolerance. Moreover, millets are highly adaptable to different weather conditions and require less water and fertilizer compared to other crops, making them an environmentally sustainable option.

As we observe the International Year of Millets 2023, let us take a moment to appreciate the nutritional and ecological benefits of this traditional grain. We encourage our readers to explore the various millet-based dishes and snacks that have been an integral part of Indian cuisine for centuries. Together, let us promote the cultivation and consumption of millets, creating a healthier and more sustainable world for generations to come.

Varsha
Student Editor

Message from the Co- Editor

As we look back, it seems wonderful that today we have arrived at the 6th edition of our annual E-Magazine 'MILIEU'. It gives me immense pleasure to have been a part of this journey, as this is much more than just a magazine to us. It is the cast of our dedication, cognizance, and all the efforts we have put in.

As India acquires the presidency of the G20 and the International Year of Millets, it becomes our responsibility to provide the world with the health, economic, environmental, and global benefits of millets. Millets, in every aspect, is viable to the entire humankind. It is the sole solution for the world which is now struck in the Global Food Disruption.

With MILIEU'23, we aim to bring forth the benefits and prospects of Millets. We envision being able to give everyone something of what we possess.

I extend my heartfelt gratitude to our Principal Prof Sadhna Sharna, Teacher-in-charge Dr Rachna Dua, and our esteemed Convenors, Mr. Shashank Singh and Dr. Ankur Srivastava, who have always been a source of guidance and motivation. Moreover, I also extended my gratitude to the entire team of MILIEU who have made this happen in the best possible way.

Rajashwi Saxena
Co-Editor

OUR ESTEEMED FACULTY MEMBERS

DR. RACHNA DUA
Associate Professor

MS. ANURADHA SHANKAR
Assistant Professor

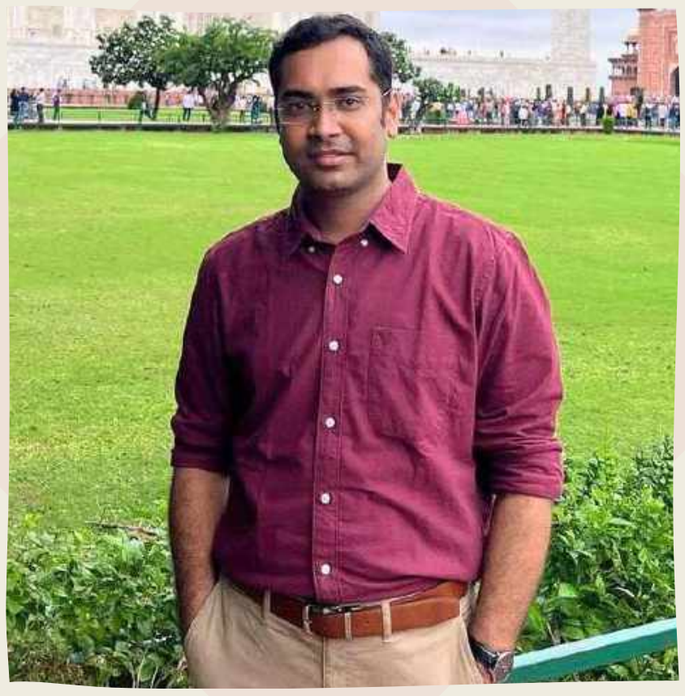
DR. GARGI K. MAJUMDAR
Assistant Professor

DR. AAKASH UPADHYAY
Assistant Professor

MS. MAANSI MALIK
Assistant Professor

MR. MD. ARIF HUSSAIN
Assistant Professor

DR. ANKUR SRIVASTAVA
Assistant Professor



MR. PREM PRAKASH
Assistant Professor

MR. SHASHANK KISHOR SINGH
Assistant Professor

MR. AMIT
Lab Assistant

01 THE MILLET RENAISSANCE

CHERRY CHAUDHARY

Millets are a group of small-seeded grasses that have been cultivated and consumed by humans for thousands of years. They are nutrient-dense, drought-resistant, and can grow in poor soil conditions, making them an important crop for small farmers in developing countries. In recent years, there has been a renewed interest in millets, particularly in India, where they are being promoted as a healthy and sustainable alternative to rice and wheat.

India has a long history of millet cultivation, with grains being grown and consumed in different regions for centuries. However, with the advent of the **Green Revolution in the 1960s, the focus shifted towards high-yielding varieties of rice and wheat, leading to a decline in the cultivation and consumption of millets.** This trend was further exacerbated by the government's policies that favored rice and wheat, leading to the neglect of millet cultivation.

INDIA SCENARIO

Top 5 Millet Producing States in India

Sr. No.	Name of Millet	Production (million tons) 2020-21	% contribution to total millets produced
1	Bajra (Pearl Millet)	10.86	60.5%
2	Jowar (Sorghum)	4.78	26.6%
3	Ragi (Finger Millet)	1.96	10.9%
4	Small Millets	0.35	1.9%
5	**Total**	**17.95**	

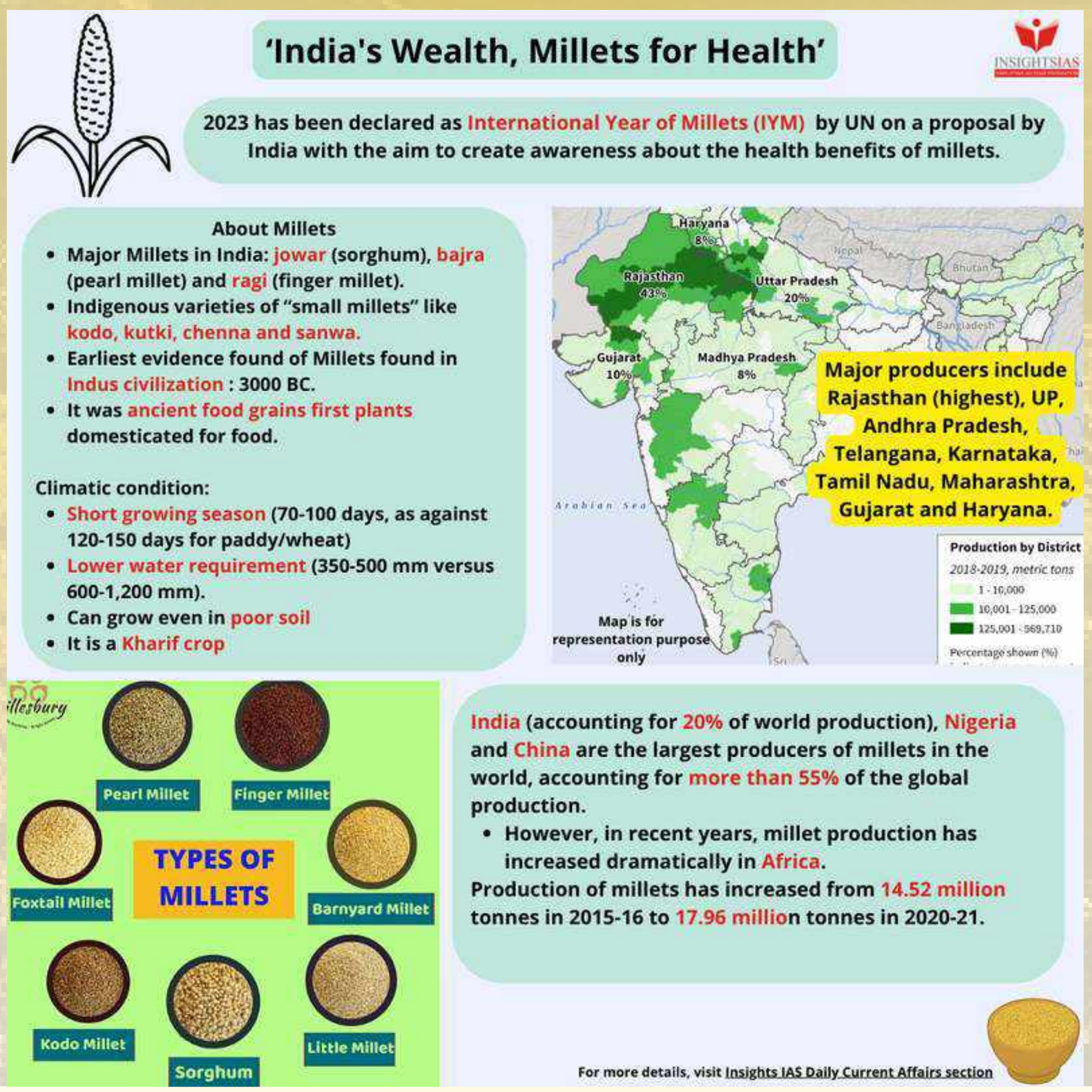
Source: Directorate of Economics & Statistics, DA&FW

- **India produces 80% of Asia's & 20% of global production**
- **Global average yield: 1229 kg/ha, India (1239 kg/ha)**

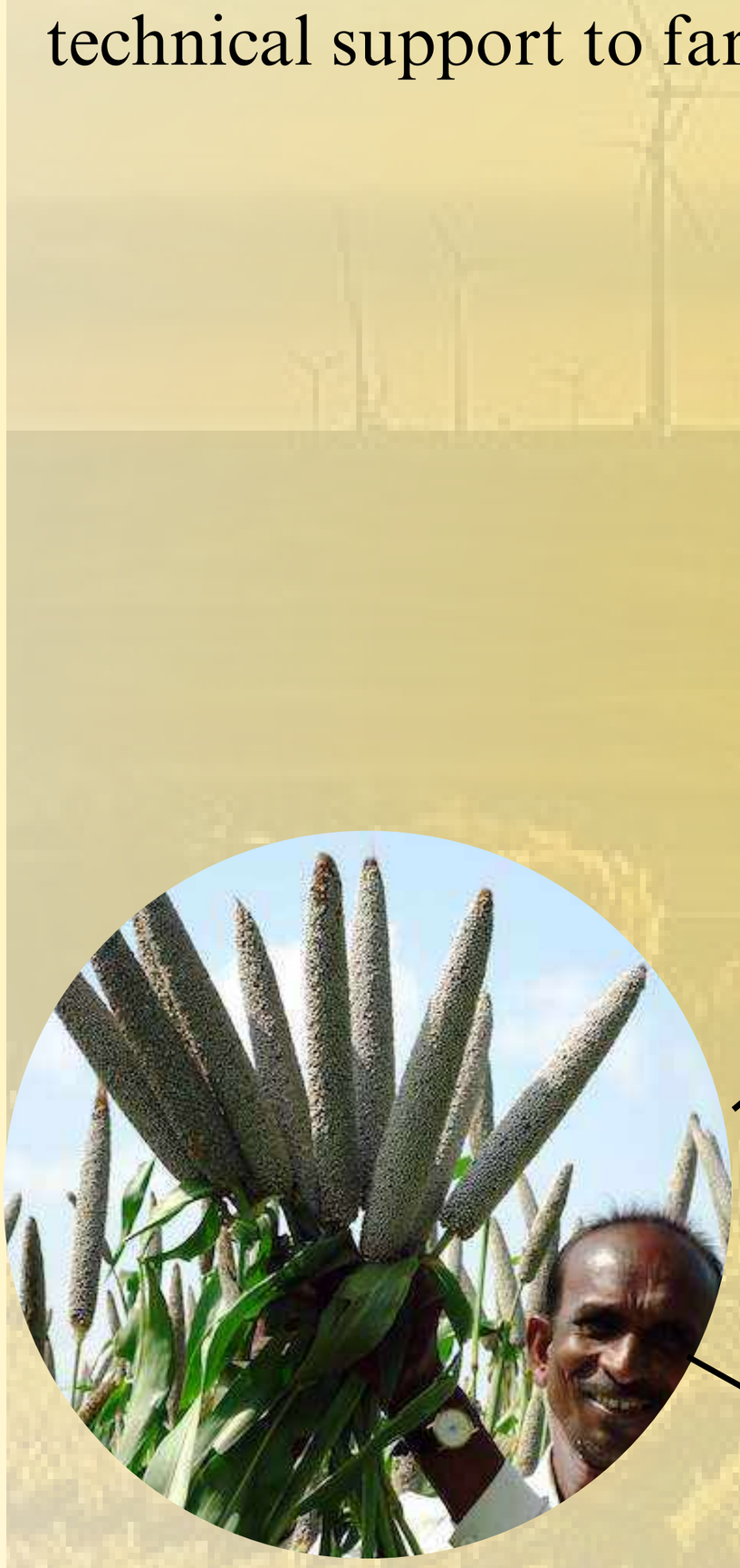
However, in recent years, there has been a growing realization of the importance of millet as a sustainable and healthy food option. In 2018, the Indian government declared the year as the National Year of Millets, to promote the cultivation, consumption, and marketing of millets. The government also launched several initiatives, such as the Millet Mission, to promote millet cultivation and provide support to millet farmers.

One of the main reasons for the renewed interest in millets is their nutritional value.

The increased demand for millet has led to a rise in the number of millet-based products in the market. From breakfast cereals and energy bars to cookies and pasta, there are a variety of millet-based products available for consumers. This has also created opportunities for small-scale millet farmers to sell their products directly to consumers, bypassing intermediaries and earning a fair price for their produce.



India's National Year of Millets in 2018 was an attempt to promote millets and create awareness among farmers and consumers about their benefits. The government's Millet Mission, launched in 2018, aims to promote millet cultivation and support millet farmers in various ways. The mission aims to provide information and knowledge about millet cultivation, production, and marketing. The government also provides subsidies, financial assistance, and technical support to farmers for millet cultivation.

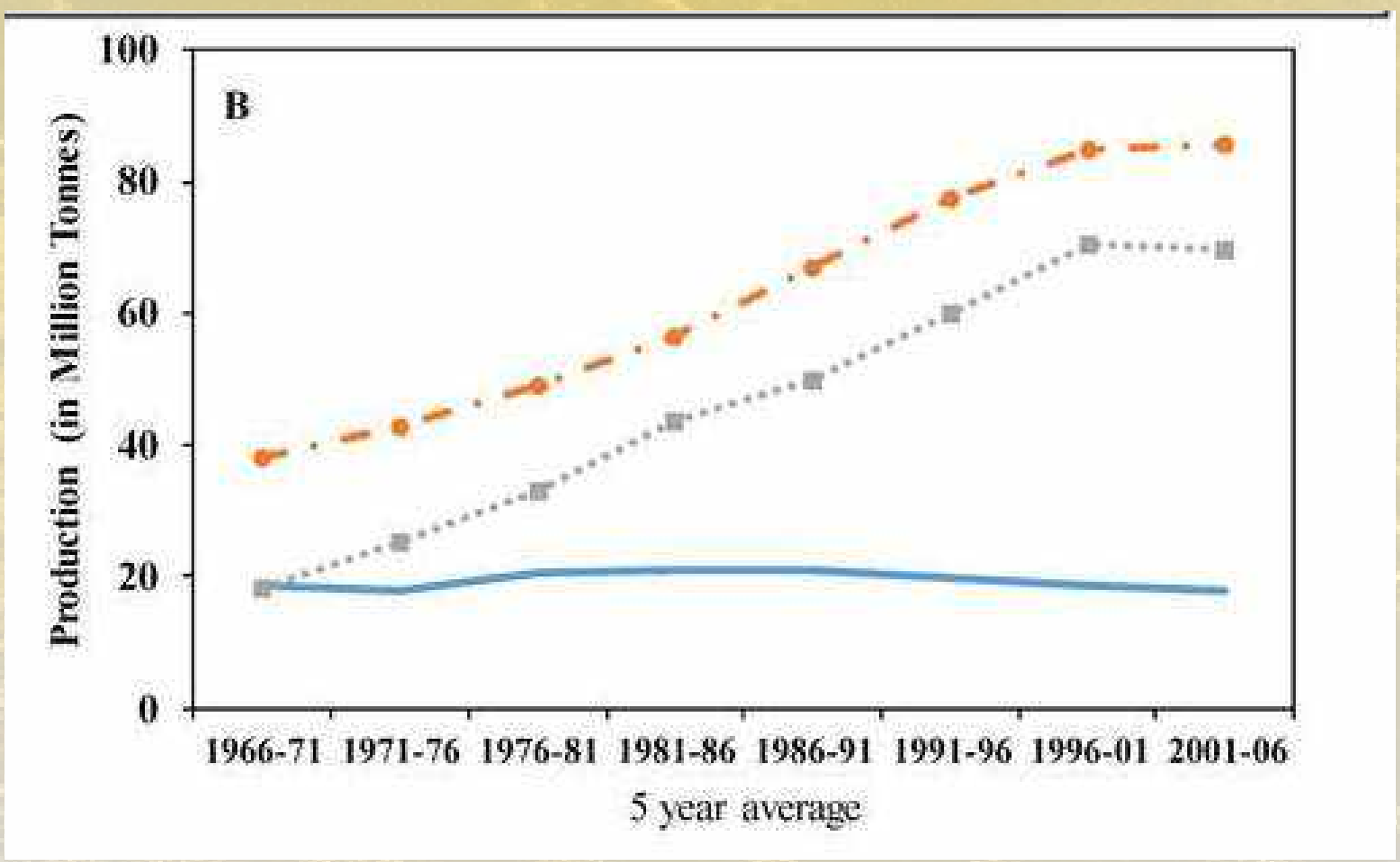


The promotion of millet has also had a positive impact on the environment. Millet cultivation requires less water and pesticides than rice and wheat, reducing the amount of water and chemicals used in agriculture. This has a positive impact on soil health, biodiversity, and overall environmental sustainability.

The promotion of millets in India has the potential to bring about a revolution in the agriculture sector. By promoting millet cultivation, the government can address some of the most pressing issues in the sector, such as water scarcity, soil degradation, and low farm incomes. Millet cultivation can also help reduce India's dependence on imports of food grains

Millets are important for small farmers in India and other developing countries. They are nutrient-dense, drought-resistant, and have a low carbon footprint, making them a sustainable and healthy food option. The renewed interest in millet in India is a positive development that could significantly impact the health and well-being of the population and the environment. With the government's support and the growing demand for millet, India is leading the way in promoting the cultivation and consumption of this important crop.

In conclusion, the promotion of millet in India can bring about a revolution in the agriculture sector. The government, NGOs, and private players need to work together to create awareness about the benefits of millet and provide support to farmers for their cultivation. By promoting millets, India can address some of the most pressing issues in the agriculture sector and create new growth and development opportunities.



02 Rise and Fall of Millet(ian) Divide in Rural & Urban India

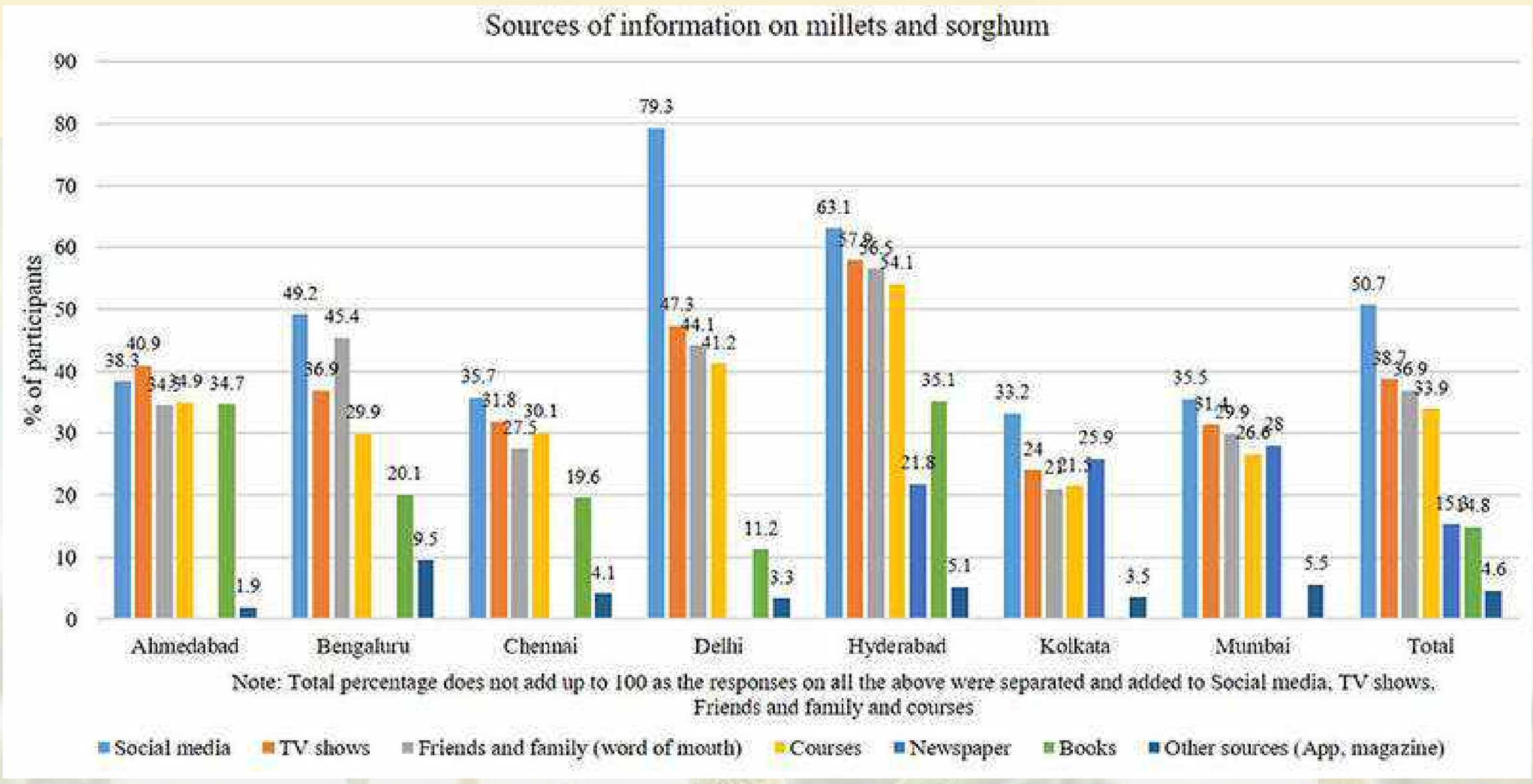
DISHITA PRASAD

Millets are the blessed crops having escaped the clutches of being a ‘climate and soil specific’ crop. They are a boon in regards to its growth requirement, as it can grow in low rain, infertile soil and are resistant to drought. Millets make up as the perfect part of human diet as it is high in nutrients, for instance, micronutrients, anti-oxidants, protein and fiber. The trump card of millet is the fact that it requires much less water than the dominant crops of India i.e., rice and wheat, nearly 70 percent less water. Thus in cumulation, millets have morpho-physiological, biomolecular and chemical characteristics giving them the tolerance to environmental and climatic stresses. Being such a sanctified crop, why did millet disappear from major diets and why was there a rise in millet(ian) divide.

The initial acumen for its fall was colonization. The preference of wheat, rice and other softer grains, lead the Indian farmers to shift to them, whereas some couldn’t due to lack of funds. It marginalized the traditional practice of millet cultivation and created a vacuum for it. Thus, the same practice was adopted by the young urban areas. Colonizers recognized the potential of Indian soil and exploited it for other crops. Our agriculture practice was colonized, and so were our food habits.

The second major and the final blow to the exodus of millets was the onset of Green Revolution in 1960s. This gave a boost to chemical-based crops such as rice and wheat which leaves a large water-footprint behind it. Millets are coarse grains and are harder to digest. But they are nutritionally denser than most of the crops. As a consequence, a tug-of-war started between millets and the chemical intensive crop where the latter was winning on the grounds of being easier to digest.

In human geography, the races and racism are studied where the divide of white and black is presented, peculiarly millets face the same. The lighter shades of rice, wheat and other water intensive crops created a mirage of being pure while on the other hand, millets produce a dark colored flour, an inferiority complex was created. This phenomenon is also termed as food racism.



Rural India still witnesses the regular consumption of millet, where it had a phase of plummeting production. The rural side of the region overcame this decline and is back on the track with rising production and consumption, though not to the initial stage. While Urban India never saw the rise in the use of millet and it vanished from most Indian diets. The reason for this divide of millet was not the availability but the changing food habits. There was a rapid acceptance of HYV seeds in the urban areas which lead to its dominance of it over millets. As there was a rise in the divide between rural and urban areas for millets, in rural areas a further division could be observed. The overshadowing of millets by crops marginalized the ones producing the former. The ones who had the capacity, and potential funding shifted to other crops and those who couldn't are still producing millets.

As millets vanished from urban diets, the same occurred in the rural areas adjoining to those urban areas. But the ones that were isolated from the urbans were protected from rapid decline but still met with the decrease. If Industrial Location Theory is put parallel to this, urban areas would require wheat, rice and other crops to be grown in the proximate distance to it. So as a result, millets would disappear from these locations. Thus, we can say there is a distance decay function where the production of millets increases as we move further from urban areas. Therefore, a rise in millet(ian) divide can be observed.

The urban lifestyle has worsened the health of people residing there. These are caused by the very crops which replaced millets. The increase in gluten via wheat and too much starch via rice has increased health risks of cardiovascular diseases, obesity etc. So now the indigenous knowledge of millets has been reintroduced back into urban diets. Millets have a high nutrition density and are healthier than the ones which have become the current major portion of diet. The fall of millet(ian) divide has started but millets are introduced via its amalgation with other dietary products. Millets are back in urban diet in a small portion for addressing the health issues. One way of reintroducing it is by serving in mid-day meals. Chhattisgarh has introduced this plan in 12 districts.

The rural and urban areas got close for millets, where the production is done in rural areas and is distributed in the urban areas. As focus has been partially shifted to millets, many agriculturists are back to producing millets, as its market projection is estimated to rise.

United Nations has declared 2023 as the International Year of Millets, with India as the prime production head. Millets have been brought under light as a solution to back hunger, promote a more sustainable crop and last but not the least to help the marginalized farmers. Thus millets will be a medium to eradicate social and economic hardships.

03 ORGANIC FARMING

NEHA

Organic farming is an agricultural system that works in harmony with nature. It largely excludes the use of synthetic inputs such as fertilizers, pesticides, hormones feed additives etc. and rely upon crop rotation, crop residues, animal manures off-farm organic waste, mineral grade brook additives and biological system of nutrient mobilization and plant protection. It uses biological fertilizers and pest control acquired from animal or plant waste. Organic farming was actually initiated as an answer to the environmental sufferings caused by the use of chemical pesticides and synthetic fertilizers. In other words organic farming is a new system of farming or agriculture that repairs, maintains and improves the eological balance. It is a unique production management system which promotes and enhances agro-ecosystem health including biodiversity, biological cycles and soil biological activity. India ranks 1st in number of organic farmers and 9th in terms of area under organic farming. Sikkim become the first state in the world to become fully organic by converting around 75,000 hectares of agricultural land into sustainable cultivation. North East India has traditionally been organic and the consumption of chemicals is far less than the rest of the country. Similarly, the tribal and island territories are being nurtured to continue their organic story. The major organic exports from India have been flax seeds, sesame, soya bean, tea, medicinal plants, rice and pulses. There was an increase of nearly 50% in organic exports in 2018-19. Commencement of exports from Assam, Mizoram, Manipur and Nagaland to UK, USA, Eswatini and Italy have proved the potential by increasing volumes and expanding to new destinations as the demand for health foods increases.

Prampragat Krishi Vikas Yojana:

Paramparagat Krishi Vikas Yojana, launched in 2015 is an elaborated component of Soil Health Management (SHM) of major project National Mission of Sustainable Agriculture (NMSA). Under PKVY, Organic farming is promoted through adoption of organic villages by cluster approach and Participatory Guarantee System (PGS) certification

Organic food is more expensive due to higher production costs, lesser availability of land and lack of workforce in comparison to conventional farming. Crop and animals produced by organic farming suffer from various illnesses more often. Organic food produced in smaller amount faces challenges of inefficient marketing and distribution to meet the demand of worlds population. Labor intensive process of organic farming products cannot support the survival needs of the existing population. Disadvantage of not using genetic modification and lack of flexibility are demerits of organic farming which require appropriate and valuable skills to understand healthy farm ecosystem, for higher productivity.

PROS

- Economical
- Good return on investment
- High demand
- Nutritional
- Environment-Friendly

CONS

- Incompetent
- Less Production
- Lack of awareness
- Shorter shelf-life
- Labor intensive

PRINCIPLES OF ORGANIC FARMING

- Principle of health Organic agriculture must contribute to the health and well being of soil, plants, animals, humans and the earth. It is the sustenance of mental, physical, ecological and social well being. For instance, it provides pollution and chemical-free, nutritious food items for humans.
- Principle of fairness Fairness is evident in maintaining equity and justice of the shared planet both among humans and other living beings. Organic farming provides good quality of life and helps in reducing poverty. Natural resources must be judiciously used and preserved for future generations.
- Principle of ecological balance Organic farming must be modeled on living ecological systems. Organic farming methods must fit the ecological balances and cycles in nature.
- Principle of care Organic agriculture should be practiced in a careful and responsible manner to benefit the present and future generations and the environment.

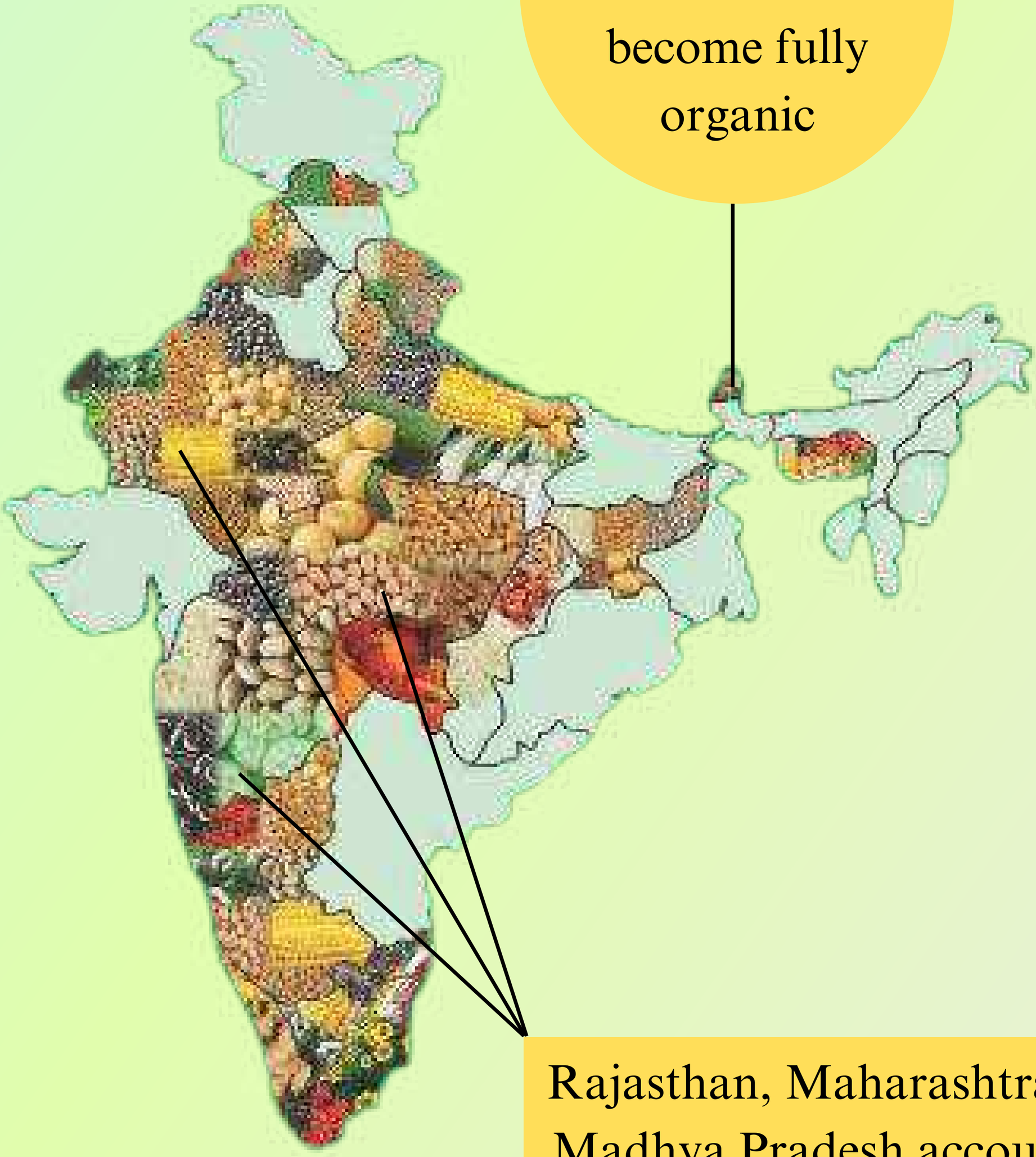
Ways To Make It Better:

- Financial support should be provided by the government (by subsidies)
- The market should be properly developed
- Awareness among people should be increased.
- Crop identification. For e.g. Soya bean should be grown in Madhya Pradesh. Cotton should be grown in rain-fed areas.

Natural farming is not a new concept in India, with farmers having tilled their land without the use of chemicals – largely relying on organic residues, cow dung, composts, etc. since time immemorial. This is also in sync with the Sustainable Development Goal 2 targeting ‘end hunger, achieve food security and improved nutrition and promote sustainable agriculture’. Hence with greater awareness and capacity building of the producers in compliance with international standards, Indian organic farmers will soon be reinforcing their rightful place in global agriculture trade.

STATES PRACTISING ORGANIC FARMING

Sikkim become the first state in the world to become fully organic



Rajasthan, Maharashtra, and Madhya Pradesh account for nearly half of the area under Organic Cultivation

04 INDIAN AGRICULTURE

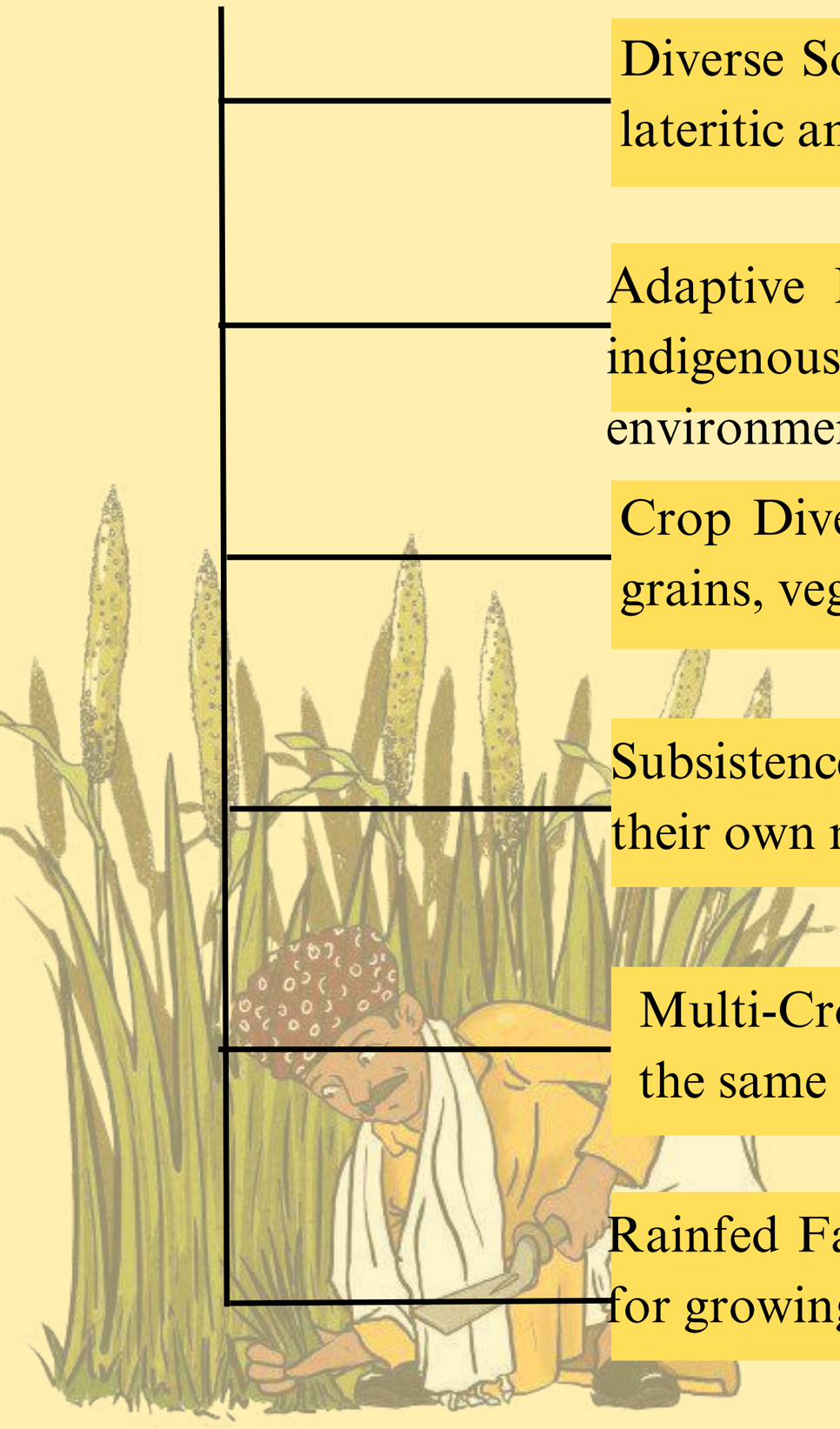
NANDINI GUPTA

Agriculture is made up of two words –'Ager' + 'culture'. 'Ager' means soil and 'culture' means cultivation. Agriculture is defined as the art, science and business of producing crops and livestock for economic purpose. Livestock, fisheries poultry comes under the allied agricultural activities.India is a global agricultural powerhouse. It is the world's largest producer of milk, pulses, and spices, and has the world's largest cattle herd (buffaloes), as well as the largest area under wheat, rice and cotton. It is the second largest producer of rice, wheat, cotton, sugarcane, farmed fish, sheep & goat meat, fruit, vegetables and tea. The country has some 195 m ha under cultivation of which some 63 percent are rainfed (roughly 125m ha) while 37 percent are irrigated (70m ha). In addition, forests cover some 65m ha of India's land. While agriculture's share in India's economy has progressively declined to less than 15% due to the high growth rates of the industrial and services sectors, the sector's importance in India's economic and social fabric goes well beyond this indicator. First, nearly three-quarters of India's families depend on rural incomes. Second, the majority of India's poor (some 770 million people or about 70 percent) are found in rural areas. And third, India's food security depends on producing cereal crops, as well as increasing its production of fruits, vegetables and milk to meet the demands of a growing population with rising incomes. To do so, a productive, competitive, diversified and sustainable agricultural sector will need to emerge at an accelerated pace.

Importance of Agriculture in India:

- ·Two third of the livelihood of the Indian population is directly or indirectly dependent on Agriculture.
- 55% of the labor force is directly or indirectly involved in Agriculture.·Agricultural sector accounts for 15% of the export earnings and 14%-17% of India's GDP.
- Agricultural sector provides the raw material for various industries such as textiles, sugar, flour mills, Jute, Apparel, etc.
- Flourishing Agricultural production in India is the main factor behind the food security of the large Indian population.
- Allied sectors in agriculture involve- horticulture, animal husbandry, dairy, fishing, etc.
- Agriculture and allied sector play vital role in providing nutrition and livelihood to the huge population in India.

SALIENT FEATURES



Diverse Soils: India has a wide variety of soil types including alluvial, lateritic and black soils.

Adaptive Farming: Indian farmers practice unique, traditional and indigenous farming practices that are especially adapted to their local environments.

Crop Diversity: India has a wide variety of crops ranging from food grains, vegetables, fruits and spices.

Subsistence Agriculture:small farmers grow a variety of crops to meet their own needs and to sell in local markets

Multi-Cropping: This method involves growing more than one crop in the same field at the same time.

Rainfed Farming: India has vast tracts of rain-fed lands that are used for growing multiple crops in one season.

05 MILLET-PRENUERSHIP IN INDIA

AISHWARYA VERMA

Millet entrepreneurship refers to the establishment and operation of businesses related to millet cultivation, processing, and marketing. Millet is an important food crop that is gaining increasing recognition for its nutritional value, environmental sustainability, and economic potential. Entrepreneurship in the millet industry may support the growth of rural economies, generate employment opportunities, and advance wholesome and sustainable food systems. Entrepreneurs can establish businesses that specialize in millet farming, giving farmers access to high-quality seeds, inputs, and training while also assisting in enhancing yields and quality. **This can lead to increased production and supply of millet, which in turn can benefit consumers and promote food security, boosting India's agricultural economy**

Despite being an agrarian nation, India only has a 20.19% total agricultural GDP share. So, if millet production were to begin in low-income or marginalized states, it would boost India's economy. Indigenous crops need to receive more attention and support under the "Vocal for Local" campaign. Empowering women farmers and self-help groups is a viable strategy to pursue this (SHG). Two states that stand out as being crucial for millet production in India are Rajasthan and Orissa. In this article, Rajasthan emphasizes on women's empowerment whereas Orissa prioritizes the tribal sector. To lower unemployment rates in our nation and consequently increase national income through agricultural means, it is crucial for the socially excluded to participate in the labor force.

Rajasthan is the largest and seventh-most populous state in India. Around 29% of its GDP is comprised of agriculture. The unemployment rate of Rajasthan ranks 3rd in India, being 65.31% for women. The main issues are domestic abuse against women, female foeticide, and illiteracy. Millet is commonly termed a "woman's crop" or "deemed crop" because of its cultural and nutritional value, low-input requirements, resilience to climate change, and income-generating potential. So, encouraging the growth and consumption of millet can have a big impact on the lives and livelihoods of women farmers and their families.

Women make up a growing portion of India's smallholder farmers. We must make sure that women farmers particularly in Rajasthan have equal access to governmental services, knowledge, and resources. A growing sector in India that has the potential to empower women and support sustainable development is millets entrepreneurship for women. In rural India, women are frequently employed in millets' cultivation and processing.

More than 60% of the workforce in Orissa is employed in agriculture, yet despite this, the sector's contribution to the state's overall gross domestic product (GSDP) is declining.

Orissa has taken strides in recent years in empowering tribal farmers to revalorize the worth of these ancient grains, which have been a component of the human food system since time immemorial. **The first state to implement MSP for small and foxtail millets would be Odisha.** The MSP for little and foxtail millets is determined by the Odisha government using the A2 + FL method. This equation accounts for both the real cost in addition to the ascribed value of family labor in the cultivation of a crop.

Why focus on the marginalized sector? The marginalized group is the most overlooked in society and is kept from contributing to the country's economic sector, which is why it is crucial to pay heed to them which in turn will intensify the growth of the National Income & GDP of India.

Would the promotion of millet entrepreneurship by the two states have an impact on the national income and rising employment rates in the future?

Since the outset, agriculture has made a significant contribution to the national economy of our country. The entire contribution of agriculture and its related industries to the GDP ranged from 48% to 60%. However, as the secondary and tertiary sectors expand, currently this percentage is rapidly reducing. A growth in agricultural surplus, brought on by increased agricultural output and productivity, boosts societal welfare, especially in rural areas. In regions with low real per capita income, agriculture is prioritized. Given that increased agricultural output and productivity are associated with better national economic growth, it is only rational and acceptable to put more emphasis on the sector's continuous development thus contributing to the advancement of millet entrepreneurship in India.

06 SUSTAINABLE AGRICULTURE

EHSAN ALI

Agriculture includes crop and animal production, aquaculture, fishing, food, and non-food forestry. Agriculture was a key development in the rise of sedentary human civilization, and farming of domesticated species created food surpluses that enabled people to live in cities. is the main source of income for about 58% of Agriculture and its related sectors are undoubtedly the main livelihoods of India, especially in its vast rural areas. It also contributes significantly to the gross domestic product (GDP). India has one of the world's largest plains, the highly fertile Indian Gangetic Plain. India has diverse climatic conditions and soil types. These physical differences, along with factors such as availability of irrigation, use of machinery, high-yielding seed varieties (HYV), pesticides, and modern agricultural inputs such as pesticides, contribute to the growth of the Indian agricultural sector.

The types of agriculture found in India are subsistence farming, large-scale and intensive farming, commercial farming, plantation farming, and pastoral farming. Agricultural systems in India range from subsistence farming to organic farming to industrial or commercial farming.

Features of Indian Agriculture

India is a significant agricultural nation. Its population is comprised primarily of farmers, at two-thirds. The majority of the food we eat is produced by agriculture, one of the main industries. In addition to producing food grains, it produces raw materials for other businesses. In our nation, agriculture has a long history of economic activity. Depending on the qualities of the physical environment, technical advancements, and socio cultural behaviors, cultivation techniques have undergone significant change over time. Different agricultural practices, ranging from commercial farming to subsistence farming, are currently being used in various regions of India. Some of the features of Indian agriculture are-

- ·Mechanization in agriculture: However, even after more than 40 years of the green and agricultural revolutions, mechanization has not been achieved in many parts of the country.
- ·Variety of crops: Since India has both tropical and temperate climates, both climate crops are observed in India. Few countries in the world have as diverse crops as India.
- ·The predominance of food crops: Food crop production is a priority for almost every farmer in the country.
- ·Seasonal patterns: India has three farming/harvesting seasons: Kharif, Rabbi, and Zayd. Certain crops are grown in India during these three seasons. For example, rice is a Khalif crop and wheat is a Rabi crop.
- ·Source of livelihood: Agriculture is the main occupation. It employs almost 61% of the total population. It contributes 25% to national income.

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- Dependence on monsoons: Agriculture in India is largely dependent on monsoons. When the monsoon is good, the production is high, and the crop is poor when the monsoon is below average. Sometimes floods devastate our crops. Agriculture depends on monsoons because the irrigation system is completely inadequate. Despite the massive expansion, about a third of the total cultivated area is irrigated. As a result, two-thirds of the growing area is still dependent on monsoons.
- ·Labor-intensive cultivation: Population growth increased pressure on land ownership. Land ownership becomes fragmented, fragmented, and uneconomical. No machinery or equipment may be used on such farms.
- ·The small size of holdings: Due to the large fragmentation and fragmentation of the farm, the land owned is very small. The average size of landholdings was 2.3 ha in India, 1993 ha in Australia, and 158 ha in the United States.

- ·Traditional methods of production: Agriculture and equipment production methods are traditional in India. This is due to people's poverty and illiteracy. Conventional technology is the main cause of low yields.
- ·Low Agricultural production: Agricultural production in India is low. India produces 27 QTLs. Wheat per hectare. France produces 71.2 quintal per hectare and the UK produces 80 qtl per hectare. The average annual productivity of farm workers is $162 in India, $973 in Norway, and $2,408 in the United States.
- ·The dominance of food crops: 75% of the area is cultivated by food crops such as wheat, rice, and bajra, and 25% of the area is cultivated by commercial crops. This pattern is the cause of backward agriculture.

07 SELF-RELIANT AGRICULTURE

ADITI SINHA

Indian economy is the fourth largest economy in the world, agriculture played a major role in it. Agriculture always remains the backbone of society. The agriculture sector contributes roughly 14% of the country's total GDP. Over 70 percent of rural households depend on agriculture. Agriculture is an important sector of the Indian economy as it contributes about 17% to the total GDP and provides employment to over 60% of the population. Indian agriculture has registered impressive growth over the last few decades. Food grain production increased from 51 million tonnes (MT) in 1950-51 to 250MT during 2011-12 highest since independence.

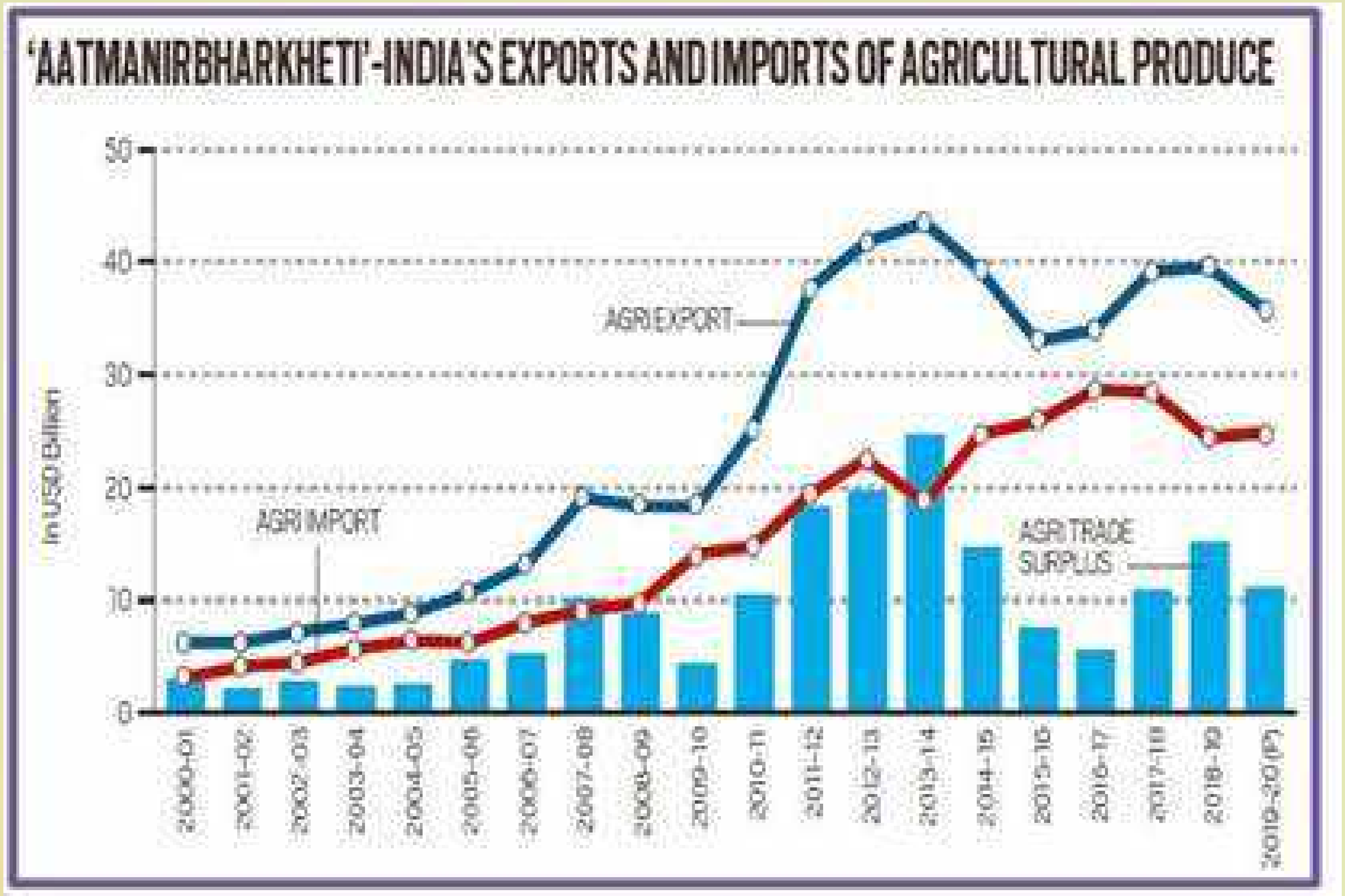
India's economy under British colonial rule remain fundamentally agrarian- about 85% of the country's population derived livelihood from agriculture directly and indirectly.

Story of **ATMANIRBHARTA in AGRICULTURE**

However, the story of India's Atmanirbharta in food starts almost five decades back. In 1950-51, India suffered from food shortages, occasional droughts, and famines that compelled it to import food grains. A rapidly growing population was creating increasing pressure on agriculture, with food production and productivity unable to keep pace. Even at this point, the agriculture sector was contributing 50% of the GDP; showing how dependent our economy was on agriculture.

The introduction of GREEN REVOLUTION under FY03 is a spectacular advancement in the field of agriculture. It refers to the large increase in food grain production due to the use of high-yield seeds (HYV) or miracle seeds for wheat and rice.

India has achieved self-reliance in the production of food grains in the last several decades, and it is a mammoth achievement for our agriculture sector as well as the overall economy. Today, India is the world's largest sugar-producing country and holds second in rice production only after China. India is also the second largest producer of wheat with a share of around 14.14 percent of the world's total production in 2020. India is also inching towards self-reliance in pulse production. As per the 4th Advance Estimates, the production of food grains in the country is estimated at 315.72 million tonnes which is higher by 4.98 million tonnes than the production of food grains during 2020-21.



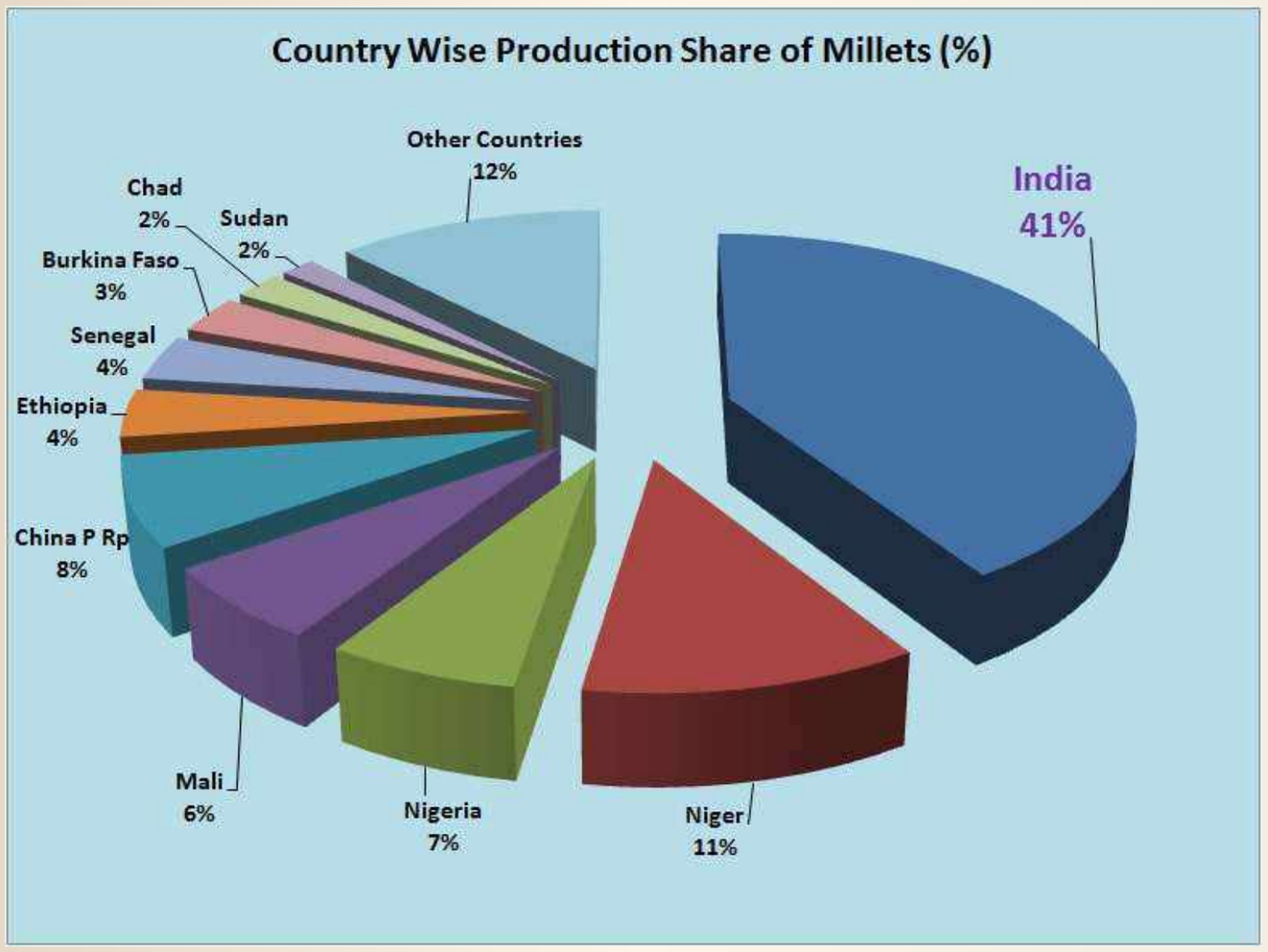
It is worth noting that our farmers grew record food grains during the deadliest pandemic of the century while the whole world was tottering under the impact of COVID-19. More than 2,067 agriculture markets were made functional to facilitate farmers during the lockdown. The Kisan Rath application was launched in April 2020 to facilitate farmers and traders in transporting Agriculture/Horticulture produce. To build the confidence of the farmers, the Government of India has been declaring the Minimum Support Price for Kharif and Rabi crops before sowing seasons, ensuring remunerative prices.

08 India: The flag bearer

ARYA ARADHANA RAUTRAY

Millet is a collective term for a wide variety of small-seeded yearly grasses that are cultivated as grain crops, mainly on marginal lands in temperate, dry, tropical, and subtropical regions. Around 131 countries in the world produce millet. This is among the traditional food for more than 60 crore people in Africa and Asia. Historically, the earliest evidence of millet cultivation has been found in the ancient Indus Valley civilization. India is the largest producer of millet in today's world. Currently, India accounts for 80% of Asia's millet production and 20% of global production. In 2018, the Food and Agriculture Organisation (FAO) approved India's proposal to observe the year 2023 as the International Year of Millets. Following this, the United Nations General Assembly during its 75th session in March 2021 announced the year 2023 as the International Year of Millets. It needs to be noted that it was India that took the lead and with support from more than 70 nations resulted in the adoption of the resolution to declare 2023 as the Year of Millets by the United Nations.

The Millet Revolution of India is driven by rising awareness about the benefits of millet for health as well as for the environment. Millet is today seen as a solution to the country's dual vision of promoting sustainable agriculture and improving public health and nutrition. Two groups of millet are grown in India. Major millets include pearl millet, sorghum, and finger millet while the minor millet includes little millet, foxtail, proso, kodo, and barnyard millet.



India values Millets as a Super crop and Nutri-Cereal

Millets are climate-resilient food crops. These require less water, can grow in poor soil conditions, and are drought resistant. This makes millet a suitable food crop for drought-fed regions and areas that have water scarcity and erratic weather patterns.

Millets are rich in nutrients. These are good sources of protein, vitamins, fiber, and minerals. Millet is also rich in magnesium and calcium. Ragi, for example, is known to have the highest content of calcium among all kinds of food grains. Including millet in daily diet can be a wonderful way of ensuring nutritional security, especially for women and children. The higher iron content in these grains can help in fighting the high prevalence of anemia among Indian women, pregnant ladies, and girls. Naturally, millets are gluten-free, which makes them suitable for consumption by people with gluten intolerance or celiac disease.

For farmers, millet is a versatile crop that can be grown in a wide variety of climates and soils. Its wide range of adaptability makes this grain a sustainable food crop. Moreover, these can be grown using traditional farming methods that make them economical and environmentally friendly in comparison to modern industrial farming practices.

Initiatives by India for the promotion of Millet

- The Indian government launched National Millets Mission in 2007 for promoting the production and consumption of millets. The Price Support Scheme provides financial assistance and incentive to Indian farmers for cultivating millets.
- The government has also introduced millet in the Public Distribution System for making it affordable and accessible and affordable to the general masses in the country.
- Provision of seed kits and inputs to farmers is introduced for building value chains of millet through Farmer Producer Organisations and facilitating the marketability of millets.
- There is a growing consensus in India to revive traditional agricultural practices for the cultivation of millet and simultaneously support small-scale farmers.

The way forward for India's Millet Mission

- Millet cultivation can be made profitable through adequate public support. There needs to be large-scale awareness and education about millet and its health benefits among the common mass.
- Certain kinds of millet today are often more expensive than other staple grains, therefore making them less accessible for economical consumers. Government subsidies and market interventions can facilitate increasing the consumption of millet.
- In this direction the Millet mission ran by the Odisha government holds a flagship example where the state is promoting millet through promotional events and urban campaigns for creating awareness among the general public on the nutritional aspects of millet.
- A consensus among farmers, government, and civil society can help increase millet demand and supply.

09 The Era of Green Revolution

AISHWARYA VERMA

The word "Millet" comes from the Latin word "Milum," which signifies grain. The Poaceae family, also known as the grass family, includes a variety of cereal grains known as millets. Millets are said to be one of the first grains that humans have domesticated.

Over the past few decades, why have millets lost popularity?

India witnessed a food deficit a few years after gaining its independence, and we were forced to act rapidly. To prevent such catastrophes, the Green Revolution gave priority to the cultivation of rice and wheat. By adopting the Western model of development, India and other developing nations have been denied an abundance of valuable and important things. One of the largest adjustments has been in eating habits. We are chasing standardization while swiftly forgetting our native food. Millets have been tossed off as being too primitive to be useful, forgetting their roots.

THE PAST

According to a report published, rice and millet were produced at levels higher than wheat, barley, and maize combined before the Green Revolution. Millets were originally produced in large quantities, but following the Green Revolution, the crops that were once devoured in every family became fodder crops in just a few decades. Millets used to make up 20% of our food grain basket between 1965 and 1970, but are now down to 6%. Despite their glorious past, millets have been cast aside in farms and on food plates over the years. Economically, being a 'Mota Anaj', the demand was primarily seen in low-income areas, with sporadic occurrences in the middle-to-high-income segment.

Farmers became demotivated by the lack of minimum support prices and incentives for output, which ultimately reduced the amount of land used for millet farming. Government policies have always emphasized commercial crops and heavily subsidized input costs. This encouraged monoculture agricultural methods that shrunk the diversity of conventional crops. Millets' low social standing as a staple meal of the working class had an impact on consumption, particularly among younger people in tribal and rural areas. In the last five decades, consumption of other minor millets increased by 83 percent whereas ragi consumption fell by 47 percent in India.

THE PRESENT

Millets are currently poised for a comeback. This superfood's nutritional value and sustainable production are being promoted through restaurants, culinary groups, workshops, recipe books, and exhibitions. With the opening of Andaz Delhi's newest deli Soul Pantry, which focuses exclusively on millet-based flatbreads, interest in this superfood has resurfaced. A premium market for the crop has been established by the growing demand for millet among higher-income groups in India, Europe, and the US for its positive health effects. The income level of farming communities that live in difficult terrain in different regions of the country is anticipated to change as a result of this market demand. The year 2023 has been declared the International Year of the Millet by the United Nations in response to a proposal made by India, which aspires to grow into a significant millet producer.

THE FUTURE

Sustainable Development Goal 2 focuses on "zero hunger". By concentrating on millet production, it might be achievable. Today, several initiatives are being implemented to boost the demand for millet in India and throughout the world, such as altering consumers' perceptions. If we evaluate our food system, the number of farmer suicides in India is also not held a secret from any of us. But as we say, “It’s never too late to start again”.

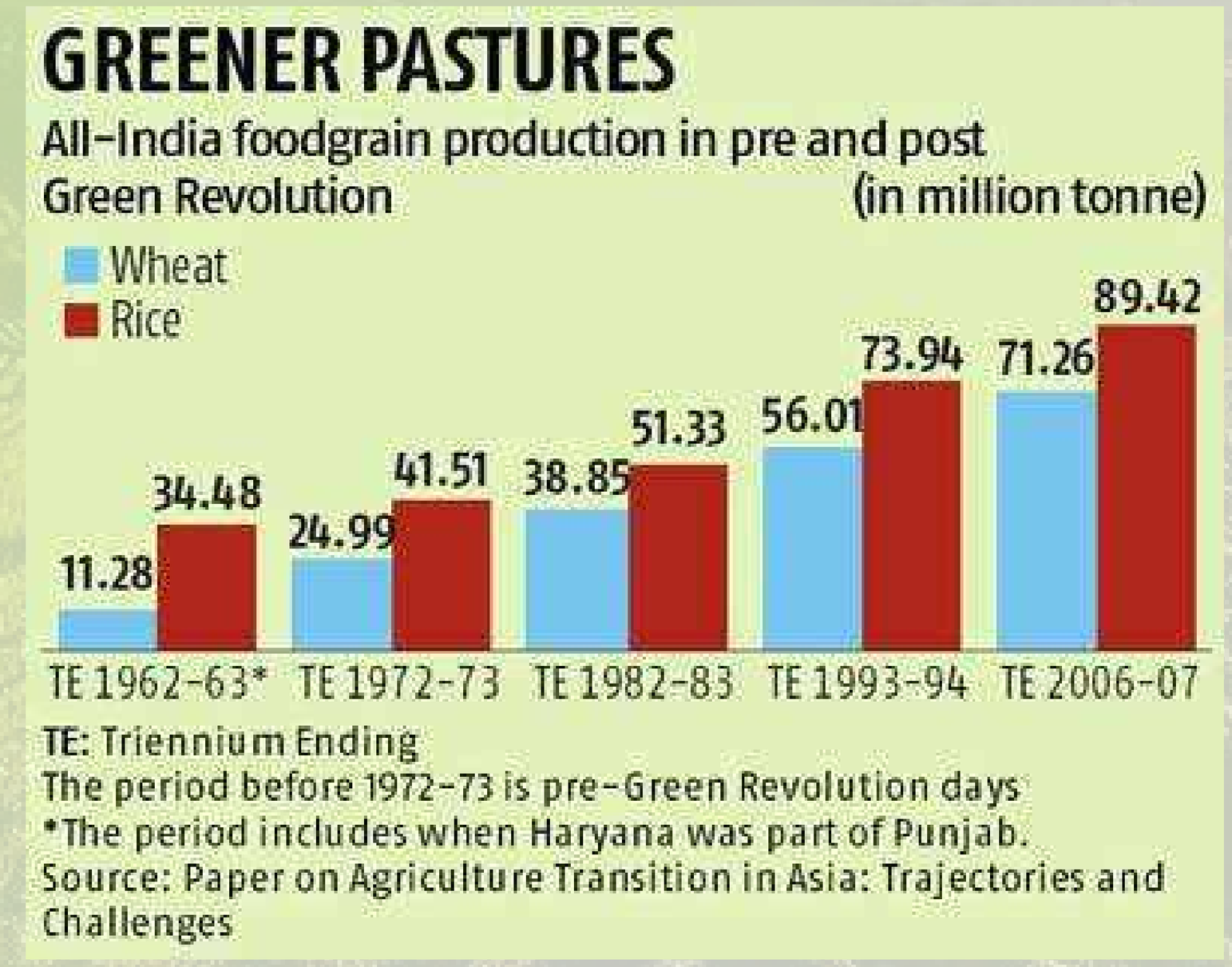
Many organizations are emerging to advance this goal. A few programs are undertaken to educate farmers about better millet-growing methods. There are numerous initiatives underway to bring millets into the mainstream as their popularity progressively increases. A thoughtful strategy to reintroduce this crop into the public consciousness will go a long way toward addressing some of the country's most pressing food problems. The Smart Food campaign is one instance of significant help to the cause. Smart Food with the tagline ‘good for you, good for the planet, and good for the smallholder farmer’ will initially concentrate on popularising millets.

ACKNOWLEDGING MILLETS AS THE MARVEL GRAIN OF THE FUTURE

The bright part is that we have begun to look back for solutions and have developed the guts to acknowledge our mistakes. This is unquestionably a positive development, and millets are now clearly in our future. There will be millet everywhere. They will exist everywhere in the world in every imaginable form. We will all need to contribute, whether we are consumers or producers. The most crucial step is to reflect on our history, rediscover our culinary values, and develop a strong faith in millets that are anchored in both tradition and nutrition. So whether it be for food security, for its nutritional benefits, to provide better financial stability to farmers, to alleviate the water crisis, or simply because they are deeply ingrained in our culture and tradition- Millets are the past, present, and surely the future.

Green Revolution in India

Krishonnati Yojana for Farmers



10 PROMINENT AGRONOMY

NITYA CHOUDHARY

Agrarian India is a nation. Our population is mostly dependent on agriculture—roughly 70%. Agriculture generates one-third of our country's total income. Agriculture is the backbone of our economy. The growth of agriculture has a significant impact on the nation's economy.

For a very long period, our agriculture remained underdeveloped. For our population, we did not generate enough food. Formerly, our nation had to import food grains, but things are now different. More food grains are produced in India than are required. Some nations are receiving some food grains. Our five-year plans have resulted in significant advancements in the agricultural sector. The agriculture sector has experienced the Green Revolution. Our nation is currently self-sufficient in food grains.

India now leads the world in both groundnut and tea output. In terms of producing rice, sugarcane, jute, and oil seeds, it comes in second place globally. Our agriculture was dependent on rainfall up until recently, before independence. Our agricultural output was thus relatively inadequate. If the monsoons were excellent, we would have a good harvest, but if they weren't, the crops would have failed and there would have been hunger in certain areas of the nation. Upon independence, our government developed plans for the country's agriculture.

To provide water for the cultivation of the land, dams were built across several of the major rivers, and canals were excavated. Farmers were given tube wells and pump sets to irrigate farms where canal water could not. A movement known as the "Green Revolution" in agriculture has been sparked by the use of improved seeds, fertilizers, and new farming methods. Although our agricultural output has significantly grown, the advancement is still not sufficient. Our population is expanding quickly.

The irrigation infrastructure was insufficient in the past. For irrigation, farmers largely used rainwater. Very few canals and tube wells existed. Several of the rivers have dams on them thanks to our government's five-year plans. Among these dams are the Bhakra-Nangal Project, the Damodar Valley Project, the Hirakud Dam, the Nagarjuna Sagar Dam, the Krishna Sagar Dam, and the Mettur Dam. To generate power for our businesses and agriculture, water is kept in large lakes and reservoirs. Canals transport the dam water to far-off locations for irrigation. The farmers have received pumping equipment and tube wells. Better crops are now produced on a larger area of irrigated land.

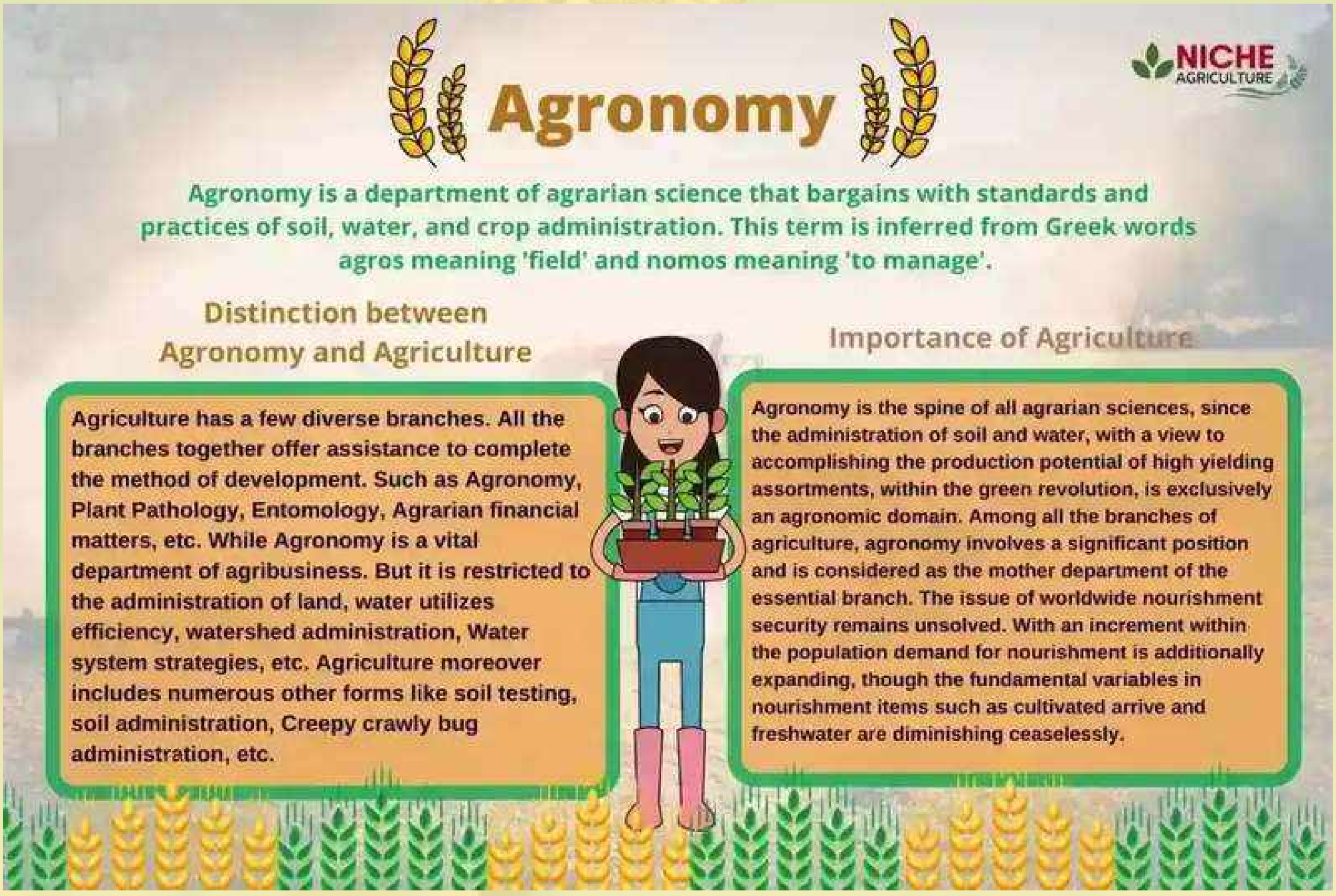
Our farmers were practicing archaic agricultural techniques. They have been planting their seeds for many years. The production was modest and the seeds were of poor quality. Farmers are now receiving high-producing varieties from government farms. These enhanced and superior seeds have significantly increased our farm's output.

The government is currently working to educate farmers. There are now institutions and colleges dedicated to agriculture. The young farm students receive all kinds of agricultural science education from them. For the farmers, several institutions and universities provide orientation programs.

These programs educate participants on cutting-edge farming practices. Farmers are being taught about the newest farming methods through various news channels and online agriculture portals in India.

The government is making several efforts to assist farmers. To prevent farmers from being taken advantage of by middlemen, it has established organizations like the Food Corporation of India that buy farm products directly from the farmers at government prices.

The small-seeded annual grasses known as millets are often farmed as grain crops on marginal land in arid locations. Only millets will handle pressing challenges like food, feed, fuel, hunger, health, and climate change in the future.



India grows nine different varieties of millets. Sorghum, Pearl Millet, and Finger Millet make up the majority of millets grown in India, accounting for 95% of the country's total millet-producingmillet area. The other 5% of millets include Small Millet, Foxtail Millet, Barnyard Millet, Proso Millet, Kodo Millet, and Browntop Millet. Millets have advantages for your health in addition to being resistant to climate change since they can withstand a broad variety of temperatures and moisture levels and require less maintenance to develop. These are resilient crops with small water and carbon footprints. It can withstand drought, and millets may even survive on 350–400 mm of rainfall. Millets develop more quickly, causing less environmental stress.

As proposed by India to the Food and Agriculture Organization, the United Nations General Assembly adopted a resolution designating 2023 as the International Year of Millets. The main goal of this initiative is to raise public awareness of the health benefits of millets and their suitability for cultivation under challenging conditions brought on by climate change. India is the world's top producer of millets and the fifth-largest exporter of millets worldwide. While the demand for millets rises quickly, their exports are expanding dramatically. Fuel and feed needs are being met by millets. It could be used to make biofuel.

More business possibilities are being created for entrepreneurs as millets demand rises. The millet market has a value of over USD 9 billion in 2018 and is expected to grow at a rate of over 4.5% from 2018 to 2025, with a value projection of over USD 12 billion.

Hence, it is clear that every effort is being made to advance our agriculture and increase its output. We must not slumber here. We should keep working to enhance our agricultural industry.

11 REINTRODUCTION OF MILLET

SHREYOSHI DEY

“The growing millet does not fear the Sun”- By Acholi, the nomadic people of Northern Uganda.

Millets are collectively referred to as several small seeded annual cereal types of grass that are cultivated as grain crops and belong to the family of Poaceae [monocotyledon flowering plants] grasses. It has high nutritive value-laden with calcium, carbohydrates, iron, magnesium, and potassium, is rich in proteins, vitamins, fiber, and minerals, and is even gluten-free. In India mainly six types of millet are grown:

- Ragi/finger millet
- Bajra/pearl millet
- Jowar/sorghum
- Buckwheat/kuttu
- Sanwa/barnyard
- Kangni/foxtail

Millets are believably among the earliest cereals cultivated by human beings and it is even said that millets are the first crop that was raised in India with several pieces of evidence found in the Indus Valley Civilization. Millets were first reared in Asia more than 4,000 years ago and used to be a major crop of consumption in Europe during the Middle Ages [5th to 15th century approximately]. Domestication started particularly in East Asia, South Asia, West Africa, and East Africa. Archaeologists have found that millets had a greater widespread presence than rice in historical times and even found traces in the diet of Chinese Neolithic and Korean Mumun cultures.

We can even find a description of millets in Yajurveda and here three kinds of millets have been identified which are foxtail millet[priyangava], Barnyard millet [aanava], and black finger millet[shyaamaka].
Millets are important in a long suit for fothers ability to produce massive livelihoods, ensuring food security and increasing a producer's income as it is produced in nature and it's the potential to grow under dry conditions in a short period. Cereals are grown all over the world as human food and animal fodder.

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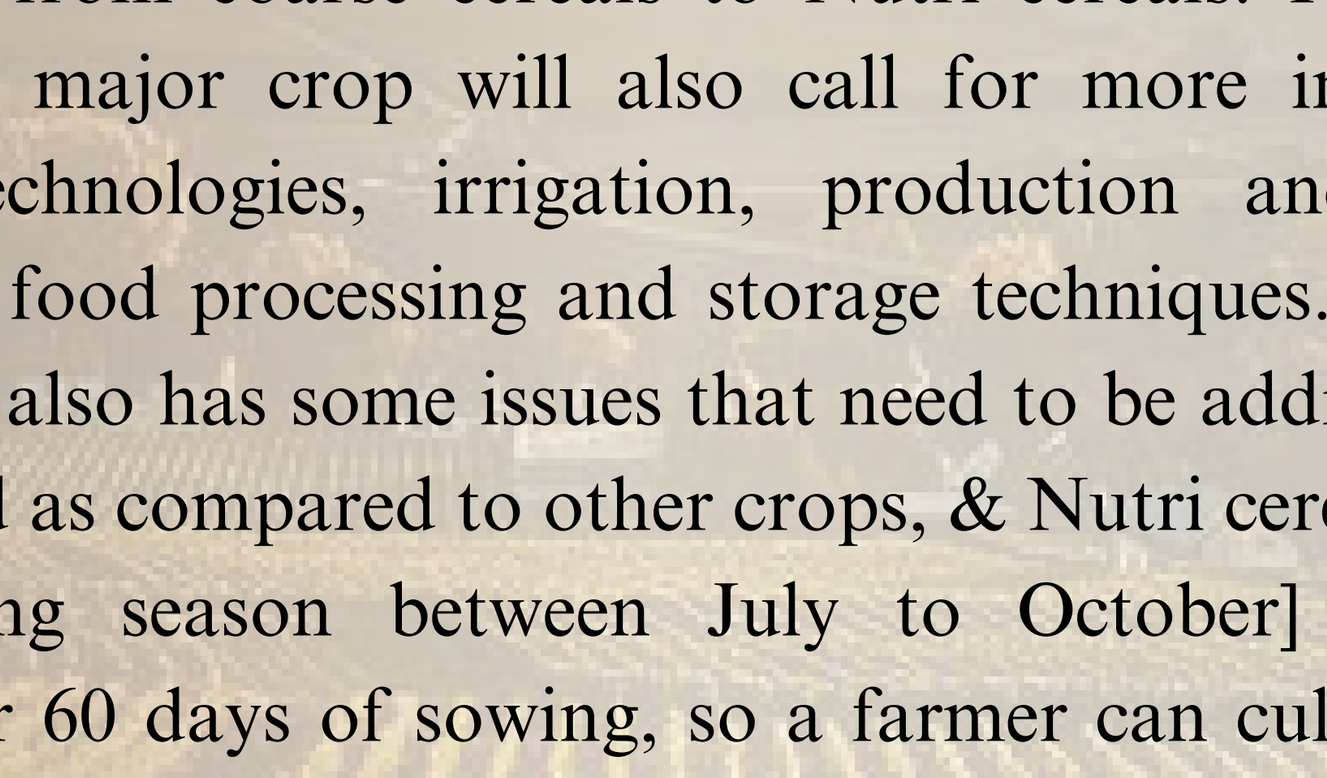
Millets are grown in more than 120 countries around the world at present and it constitutes traditional food for more than 40 crore people covering the continents of Asia and Africa. This cereals are not included in our daily meal in that amount that used to be incorporated earlier because of change in food habits post globalisation. Millets are dubbed to be poor man's food, basically in India, because of its low price and because these are coarse grains as the external structure is not smooth and it can become mature in infertile soil with minimum amount of water.

Millets got shunned in India after Green Revolution because the Government had doubled the production of Rice and Wheat with high build machinery and introduction to High yielding variety of seeds i.e. priority was given to rice and wheat production. The Reintroduction of millets in people's diets would bring dramatic changes in the global agri-food system and even in the health conditions of the masses. As millets are resilient and climate-smart crops and high in nutritive value and to some extent, they will help in fulfilling the food demand of the overgrowing global population.

In addition, Re-establishing millet as the major crop will help oneself to grapple with lifestyle changes as they've high iron content which helps to deal with anemia and has a low glycaemic index that has a lesser impact on blood sugar levels and helps to fight against diabetes and controls cholesterol level, and it can even become a sustainable alternative to major cereals. Due to their nutritional benefits and to help people understand their benefits, the nomenclature of millets has been changed from coarse cereals to Nutri cereals. Restoration of millets as the major crop will also call for more investments in machinery, technologies, irrigation, production and cultivation practices, and food processing and storage techniques. Encouraging its production also has some issues that need to be addressed such as it has low yield as compared to other crops, & Nutri cereals are kharif crops [cropping season between July to October] and can be harvested after 60 days of sowing, so a farmer can cultivate it three times a year in contrast to its low yielding capacity.



United Nations General Assembly has declared 2023 as the International Year of Millets, following a proposition by India and was approved by Food and Agriculture Organisation in 2018. India is the largest producer of millet in the world. India wants to position itself as the 'Global Hub of Millets'. During Independence millets comprised 40% of total cultivated grains in India, our country produces 80% of Asia and 20% of global millet production. Rajasthan is the leading producer of millets followed by Maharashtra and Gujarat.

Putting their production in power again will help in achieving food security and alleviating poverty among poor and developing Nations and can be helpful in overcoming malnutrition. Millets leave less carbon footprints as compared to wheat, maize, and rice. They are considered to be one of the sustainable food sources as they are unaffected by climate, and pests and are even low-cost intensive crops.

12 THE GOLDEN YEAR

AMRAPALI KUMARI

The year 2023 has been declared by the United Nations as the ‘International Year of the Millets’. What are millets? Millets also known as food grains are a common term for categorising small seeded grasses that are often called nutri-cereals. Some of them are Sorghum{jowar}, Pearl millet{bajra}, Finger millets{ragi}, Barnyard millet{barnyard millet}, Kado millet{kodra}, etc. The Government Of India[GOI] sponsored the proposal for ‘International Year of Millets[IYM} 2023’, which was accepted by the United Nations General Assembly {UNGA}. The declaration has been instrumental for the government of India to be at the forefront in celebrating the INTERNATIONAL YEAR OF MILLETS . PM Narendra Modi has also shared his vision to make IYM 2023 of peoples movement alongside positioning India as The Global Hub for Millets. Benefits of millets ; Millets are nutritionally superior to wheat and rice owing to their higher protein level and a more rich sources of nutrients like carbohydrates, protein, fibre and good quality fats and minerals like calcium, potassium, magnesium, iron, etc. Millets Producing States ; India produces all the nine commonly known millets being the largest producer and largest exporter of millets in the world. Most of the states in India grow one or more millet crop species. It is mostly cultivated in Jhum Field. April-May months is best for its cultivation in Jhum field. **Rajasthan, Uttar Pradesh, Haryana, Gujarat, Madhya Pradesh, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh and Telangana are the major millets producing states.**

Climate; Generally the millets are grown in tropical as well as sub-tropical up to an altitude of 2,100m. It is a heat-loving plant and for its germination, the minimum temperature required is 8-10 degree Celsius. Evolution of millets; millets were probably first cultivated in Asia more than 400yrs ago, and they were major grains in Europe during the middle ages.

Today though they are used chiefly for pasture or to produce hay in the United States and Western Europe, they remain important food staples in less developed countries worldwide. Evolution of millets in India; In India, millets have been mentioned in some of the oldest Yajurveda texts,
identifying foxtail millets{priyangava}, Barnyard millet{aanava}, and Black Finger millet{skyamaka}, thus indicating that millet consumption was very common, pre-dating to the Indian Bronze Age{4500bc}.

Popular Millet of India; 'Bazra' also called Pearl Millet is the most cultivated millet crop. India is the largest producer of millet in the world with an annual production of around 10 million tonnes. It is followed by Nigeria, and China in terms of millet production in the world. As the global agrifood system faces challenges to feed an ever-growing global population, resilient cereals like millets provide an affordable and nutritious option, and efforts need to be scaled up to promote their
cultivation. Millets can play an important role and contribute to our collective efforts to empower smallholder farmers, achieve sustainable development, eliminate hunger, adapt to climate change, promote biodiversity, and transform the agrifood system.

So it's interesting how an ancient crop that has lost its importance in the new era is once again triggering in the hearts of people as being **"AGRICULTURAL PRODUCE OF THE YEAR"**

13 THE INDIAN FARMER

NANDINI

Farming is the backbone of our economy and almost all the people of this country are directly or indirectly related to it. Farming is the act or the process of working on the ground, planting seeds, and growing edible plants and a wide variety of crops. India is a country with diverse cultures and languages, but every individual has one need, which is “food”, which is cultivated by farmers. Farmers play a crucial role in farming. They work on farms day and night to cultivate crops and feed people. Farmers also have to grow crops to feed their animals. Indian Farmers can survive in various seasons, climate change, soil conditions, and often harsh destructions of droughts, wildfires, and floods.

The function of a farmer varies according to the type of operation like managing farms, greenhouses, ranches, nurseries, and other agricultural production organizations. A farmer who cultivates the crops is responsible for making the land for harvesting the crops, sowing the seeds, and taking care of it. Some farmers sell their crops in the market while other have arrangements with processing companies or other establishments. The crops may include special crops such as grains, cotton, fruits, and vegetables for people to consume.

Agriculture in India contributes significantly to the gross domestic product (GDP). In the situation of food security, rural employment and environmental techniques like soil conservation, management of natural resources, and sustainable agriculture are essential for the development of the entire rural area.

For overall rural development, the Indian agricultural sector has been a symbol of the Green Revolution, Yellow Revolution, White Revolution, and Blue Revolution. On the other hand, the moneylenders still play an essential role in agricultural glory, where the interest paid to them will be more than the profit from cultivated crops. It is very difficult to get workers after the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). It ruined agriculture with labor shortages and the schema is anti-agricultural. The price of a crop is also the opposite of productivity. If the productivity is higher then the price will be lower and vice versa. Good rainfall, good yield, and good prices never come together. So the income of the farmers will be either marginal or there will be profit or loss. Only large farmers can use machines and achieve good productivity with low production costs.

Too much rain or drought also destroys the crops or if everything is good and productivity is low then the price will increase. Urban consumers who used to get the best media attention would protest if food prices rise, but they won't understand the problems of the farmers, i.e. 100rs per kg breaking news, onion 10rs per kg is no news. There are also the people (middlemen) who earn by sucking the blood of farmers. Every farmer these days wants their child to get out of agriculture because they are aware of the difficulties one faces in agriculture. There are many schemes implemented by the government through agriculture, NABARD, and central / state agencies. Farming systems are used strategically in India, according to the places where they are best suited.

14 INDIA'S STAKE IN PRODUCTION

NEERAJ

Millets are one of the oldest foods, these are the small-seeded hardy crops that can grow well in dry zones or rain-fed areas under marginal conditions of soil fertility and moisture. Commonly grown millet in India includes Jowar, Bajra, Ragi, Jhangora, Barri, Kangni, Kodra, etc.Millets are cultivated in low-fertile land, tribal and rain-fed, and mountainous areas. These areas include Haryana, Uttar Pradesh, Chhattisgarh, Gujarat, Rajasthan, Madhya Pradesh, Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu, and Telangana.

The area under cultivation, production, and yield of millets

Crop	Area (Million hectares)	Production (Million tonnes)	Yield (Kg per hectare)
Sorghum (kharif)	1.76	1.58	967
Sorghum (Rabi)	3.07	2.73	1002
Sorghum (total)	4.83	4.31	989
Bajra	7.55	9.22	1374
Ragi	1.01	1.67	1747
Small millets	0.459	0.33	809
Total millets	13.83	15.53	1248

Source: Final Estimates-2021-22, DES, Government of India

Challenges of Millet Production:

Mono-cropping: The Green Revolution has altered the cropping pattern, The area under Millet cultivation was reduced from 37 million hectares in the pre-Green Revolution period to 14 million hectares. Millets have become a predominantly fodder crop from a staple diet earlier.

Inconsistent Supply and Demand: According to the NSSO household consumption expenditure survey less than 10% of rural and urban households reported consumption of millet. It is not the first choice of either consumers or farmers and The lack of access to HYV seeds has led to low crop productivity.

Production of millets in India: state wise Indian Scenario of Millets Production

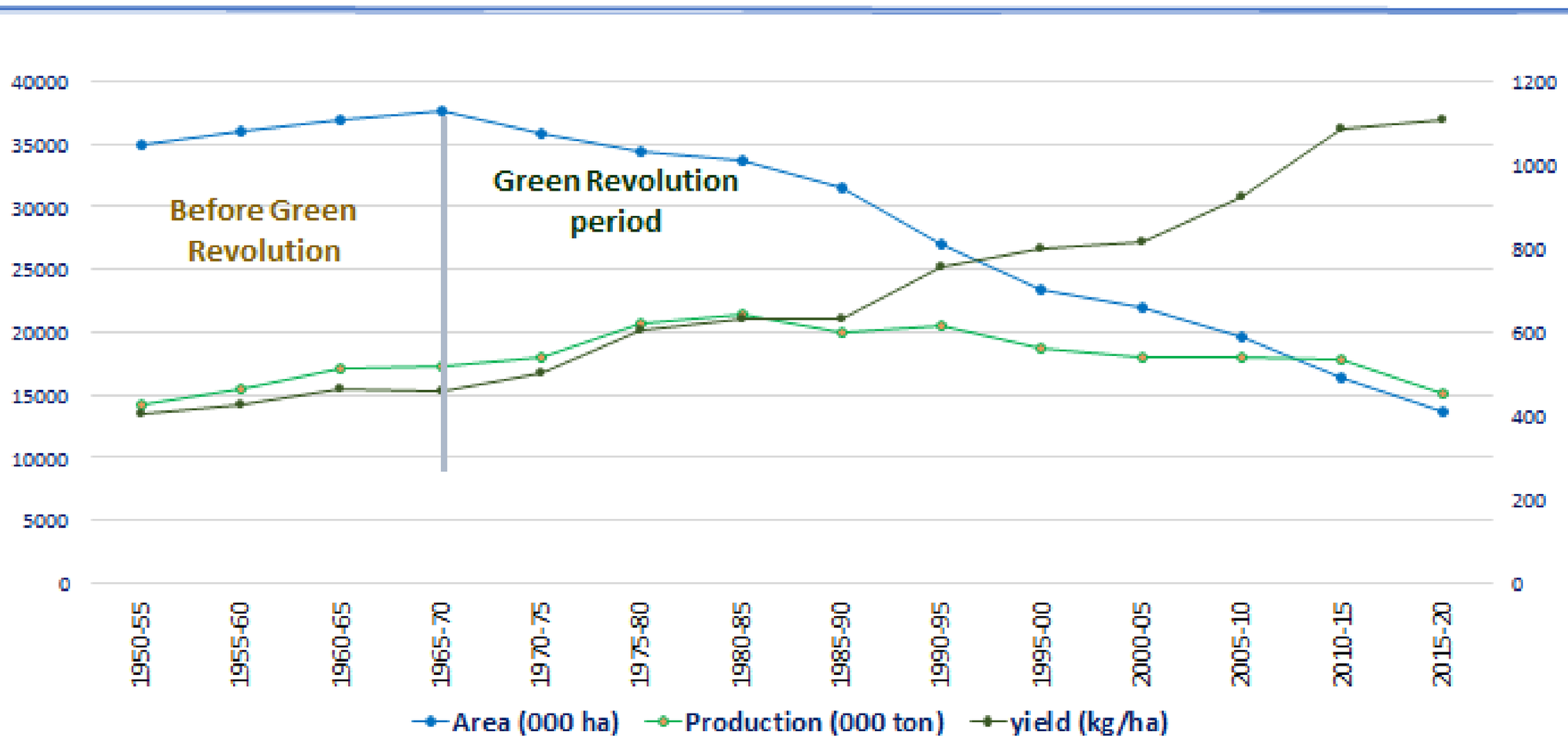
	2018	2019	2019	2020
States	Area (Million hectares)	Production (Million tonnes)	Area (Million hectares)	Production (Million tonnes)
Rajasthan	5.83	6.99	6.13	7.29
Karnataka	3.01	5.52	3.13	6.45
Madhya Pradesh	1.84	5.15	1.84	4.82
Maharashtra	3.32	3.10	4.33	4.73
Uttar Pradesh	1.91	3.95	1.99	4.47
Tamil Nadu	0.92	3.71	0.96	3.33
Telangana	0.61	2.16	0.66	3.14
Andhra Pradesh	0.49	1.86	0.56	2.68

Source: Agriculture Statistics at a glance, 2021

Processing Issues: millets require multiple processing for optimization of grain recovery and polishing to retain their nutritional value. Processing of millets faces several hurdles owing to variations in the size of various millet types and the low shelf life of the processed millets. The grains vary in terms of shape, nature of grain surface, hardness, husk-grain bonding, etc. The lack of processing units makes it difficult to bring cultivated millets to the consumption market.

Low Shelf Life: Processed Millets have poor shelf life due to their intrinsic enzyme activity that causes the rapid development of rancidity and bitterness. Millet products are also prone to moisture and water activity. Quality assurance thus greatly depends on different pre-treatments and storage conditions.

QUINQUENNIAL MEAN AREA, PRODUCTION & YIELD OF MILLETS IN INDIA



- Area decreased (56%), productivity has increased (228%) High adoption of high yielding varieties/ hybrids
- Up to 1965-70: Millets- 20% of total food grain basket, now only 6% dominated by rice & wheat.

15 THE FUTURE BOONS

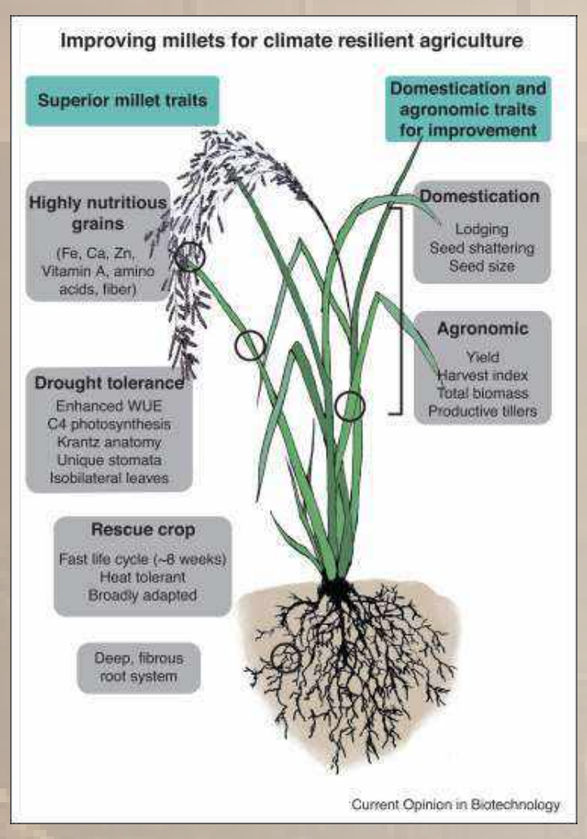
DOROTHI DAS

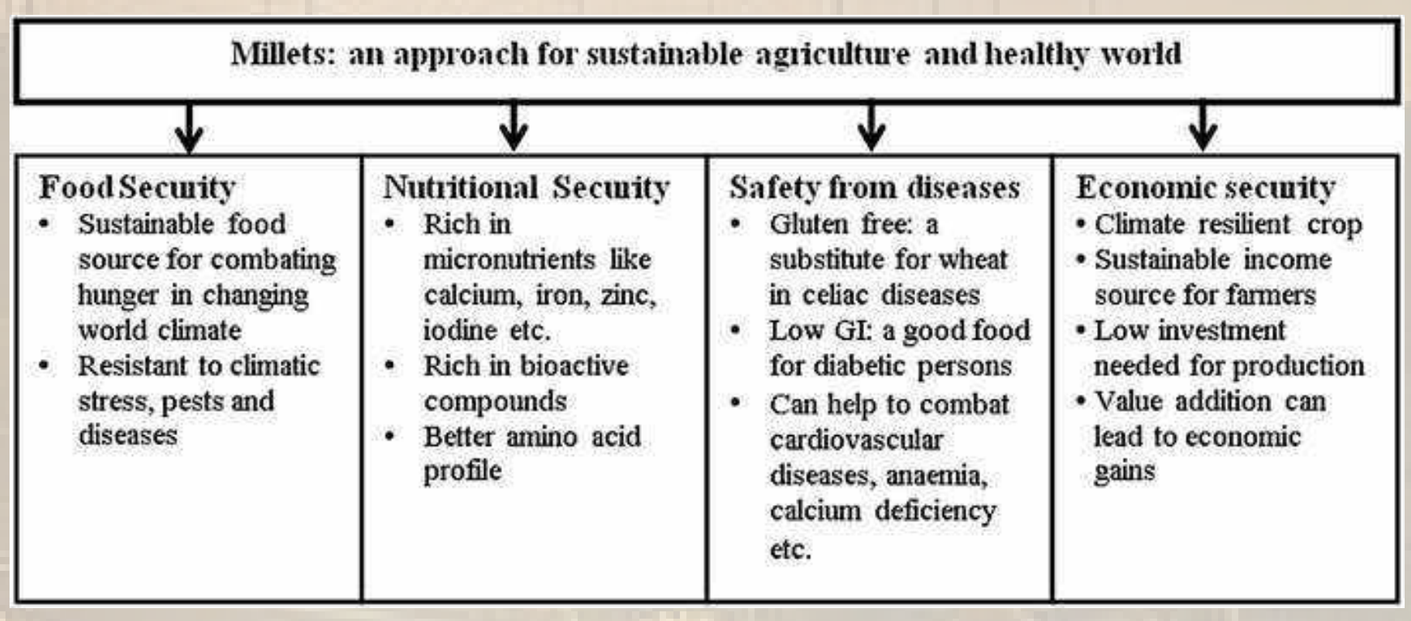
The year 2023 has been endorsed by Food and Agriculture Organization and approved by United Nations General Assembly as the ‘International Year of Millets’ proposed by India and supported by 70 nations. The aim is to increase awareness of the health benefits of millets and their suitability for cultivation in tough conditions (Food and Agriculture Organization, 2022), In April 2018, millets were rebranded as "Nutri Cereals," and the year 2018 was proclaimed “The National Year of Millets”. This was done in consideration of the millets' high nutritional content, potential to economically empower small and marginal farmers, and contribution to sustaining the earth's biodiversity. By designating 2023 as the “International Year of Millets”, India's initiatives to cultivate and consume millets have gained attention on a global scale.

IYM 2023 aims to contribute to the UN 2030 Agenda for sustainable development, particularly SDGs (Zero Hunger), SDG 3 (Good health and well-being), SDG 8 (Decent work and economic growth), SDG 12 (Responsible consumption and production), SDG 13 (Climate action) and SDG 15 (Life on land).

1) The sustainable cultivation of millets can support climate-resilient agriculture SDG 13 (Climate Action) and SDG 15 (Life on Land):

- Millets are often referred to as 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 other cereals.
- Including and/or expanding the production of millets in national agricultural systems can support the transformation to more efficient, inclusive, resilient, and sustainable agrifood systems for better production, better nutrition, a better environment, and a better life.



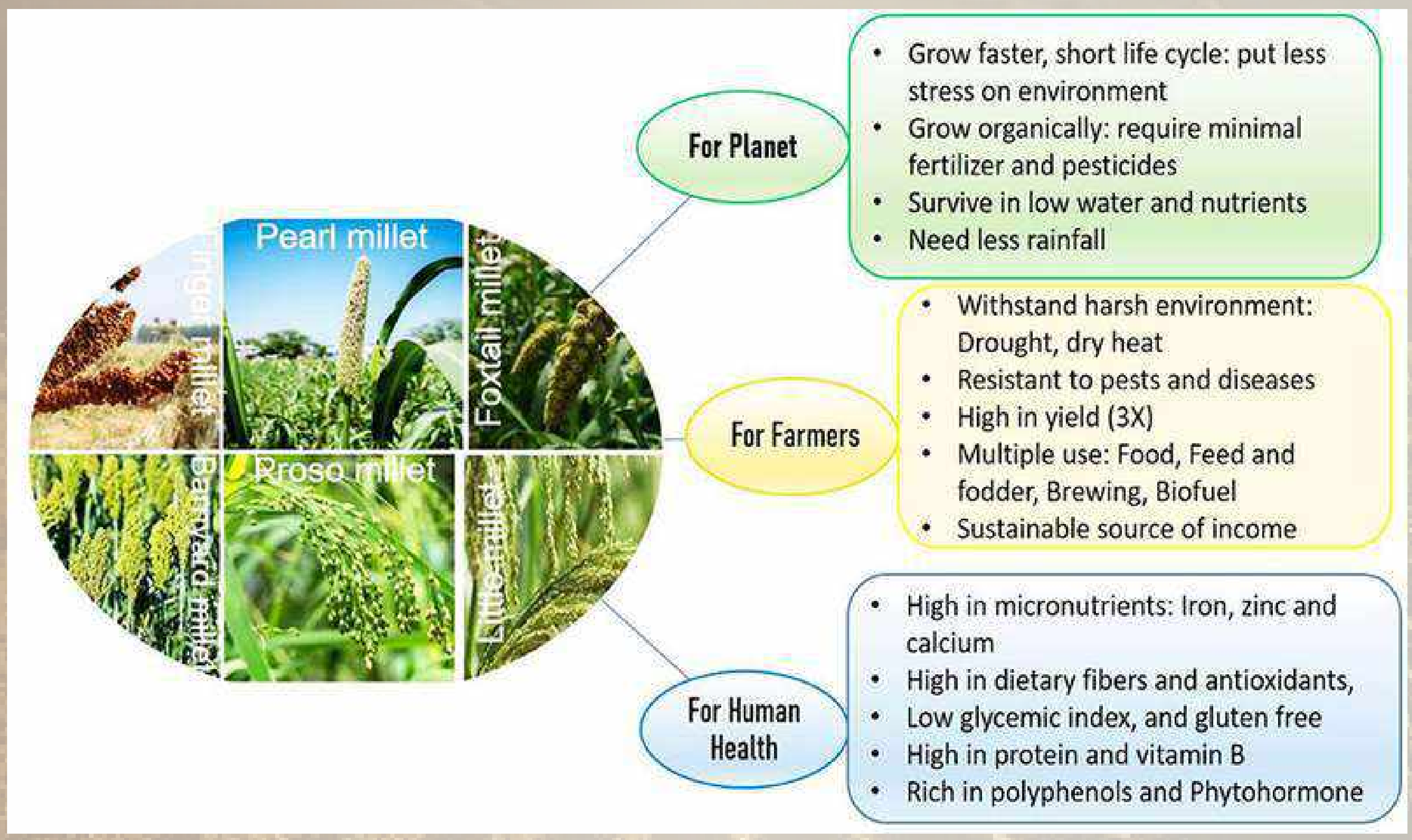


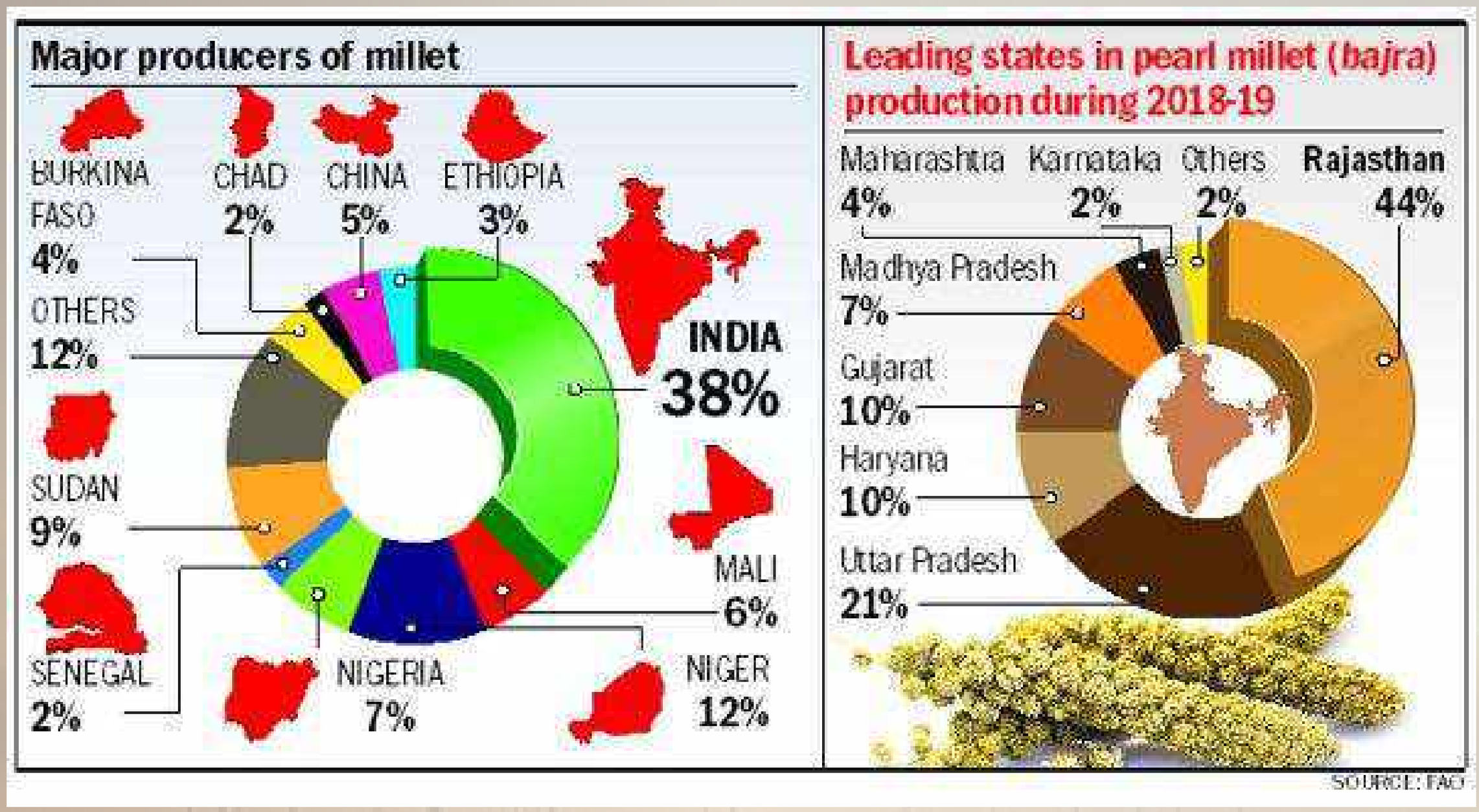
2) The sustainable production of millets can fight hunger and contribute to food security and nutrition SDG 2 (End Hunger):

- In arid areas, millets are very often the only crops that can be harvested in the dry season and are a crucial part of the household food basket. Millets can help to overcome food scarcity in difficult periods, therefore contributing to the food security and nutrition of vulnerable populations.
- Millets can grow in very poor and fertile soils in dryland conditions 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

3) Greater consumption of millets can offer opportunities to smallholder farmers to improve their livelihood SDG 8 (Decent Work and Economic Growth):

- The production of millets and the demand for them has declined as other cereals such as wheat, maize or rice became a dietary preference. By promoting millets and regaining market opportunities, additional sources of revenue can be created for smallholders and in the food sector, boosting economic growth.
- Millets were among the first plants to be domesticated and for centuries, they have been an important food for hundreds of millions of people in sub-Saharan Africa and Asia. They are deeply rooted in Indigenous Peoples' culture and traditions and therefore a strategic crop to guarantee food security in areas where they are culturally relevant.





4) Greater trade in millets can improve the diversity of the global food system SDG 8 (Decent Work and Economic Growth) and SDG 12 (Sustainable Consumption and Production):

- Millets, including sorghum, account for less than 3% of the global grains trade. With the need to improve the resilience of global trade and its ability to respond to sudden changes in the foodgrain market, millets are a valuable option to increase output diversity and mitigate risks related to production shocks.
- Market structure and transparency, in relation to volumes and prices of millets, are key elements to ensure stability and sustainability. It is important to ensure that millet traders benefit from the same tools as other grain traders, such as digitalisation, which could boost the added value of millet along the grains value chain and consequently provide more revenue opportunities for producers.

Efforts and support to transform the Indian Institute of Millet Research, Hyderabad into a center of Excellence are a great initiative that will solidify our leadership in the millet sector, particularly given that 2023 is the International Year of Millets. This will not only help spread and impart the knowledge that India has about millets to the rest of the world, but will also allow India to learn from the rest of the world to advance and grow to new heights of productivity, technological development, widespread consumption of millets, and other things. Millets would need to be given several creative uses and promoted as a great source of nutrition so that they end up on the daily menus of a large number of households to become widely used.

16 टिकाऊ कृषि और स्वास्थ्य आहार

SHAMA BANO

वर्ष 2023 को भारत द्वारा एक प्रस्ताव के बाद संयुक्त राष्ट्र के खाद्य और कृषि संगठन ने बाजरे के लिए अंतरराष्ट्रीय वर्ष घोषित किया । बाजरा होते तो बीजों वाले अनाज का एक समूह हैं जो विशेष रूप से सूखे इलाके के लिए उपयुक्त है। बाजरा अपने लची लेपन और कठोर परिस्थितियों में जीवित रहने की क्षमता के लिए जाने जाते हैं। बाजरे के लिए अंतर्राष्ट्रीय वर्ष की घोषणा का उद्देश्य इन अनाजों के पोषण, सांस्कृतिक और आर्थिक लाभों के बारे में जागरूकता बढ़ाना है। यह दुनिया भर में उनके उत्पादन और खपत को बढ़ावा देना चाहता हैं; बाजरा सदियों से दुनिया के कई हिस्सों में मुख्य भोजन रहा है। ये आयरन, कैल्शियम और मैग्नीशियम जैसे तत्वों से भरपूर होते हैं। इसमें फाइबर भी अधिक होता है जो मधुमेह हृदय रोग और कैंसर जैसी बीमारियों को रोकने में मदद करता हैं। बाजरे का ग्लाइसेमिक इंडेक्स कम होता है जिसका अर्थ होता है ऐसे खाद्य पदार्थों का एक्ट के स्तर पर उन खाद्य पदार्थों की तुलना में कम प्रभाव पड़ता है जो सूचकांक में उच्च होते हैं।

हालांकि हाल के दशकों में बाजरे की खपत में गिरावट आई है। यह विभिन्न निश्चित कारकों के कारण है जिसमें सरकार और खाद्य उद्योग द्वारा अन्य फसलों को बढ़ावा देना शामिल हैं और इसके परिणामस्वरूप जैव विविधता का नुकसान और पोषक तत्वों से भरपूर खाद्य पदार्थों की रही हैं। मोटे अनाज के लिए अंतर्राष्ट्रीय वर्ष की घोषणा का उद्देश्य इस प्रवृत्ति को उलटना हैं। यह किसानों को बाजरा उगाने और उनकी उपज को बढ़ावा देने के लिए किया जा रहा है इससे खाद्य सुरक्षा बढ़ाने, टिकाऊ कृषि को बढ़ावा देने और ग्रामीण विकास को समर्थन देने में मदद मिलेगी । वैश्विक कृषि खाद्य प्रणाली बढ़ती वैश्विक आबादी को खिलाने के लिए चुनौतियों का सामना कर रही हैं। ऐसे में बाजरे के लिए अंतर्राष्ट्रीय वर्ष की घोषणा समयोचित हैं। जैसे जैसे वैश्विक आबादी बढ़ती जा रही हैं, भोजन को मांग भी बढ़ती जा रही है। वह जलवायु परिवर्तन के कारण दुनिया के कई हिस्सों में फसल उगाना मुश्किल हो ता जा रहा हैं।

बाजरा इन चुनौतियों का समाधान पेश करता है और पोषण संबंधी लाभ और टिकाऊ कृषि के लिए उपयुक्त है। इसकी उपर्युक्त को ध्यान में रखते हुए एफएसओ के महानिदेशक 'क्यू डॉ ग्यु' कहते हैं "बाजरा एक महत्वपूर्ण भूमिका निभा सकते हैं और छोटे किसानों को एग्जैक्ट बनाने, सतत विकास हासिल करने, भूदा को खत्म करने, जलवायु परिवर्तन के अनुकूल होने, जैव विविधता को बढ़ावा देने और कृषि खाद्य प्रणालियों को बदलने के हमारा सामूहिक प्रयासों में योगदान दे सकते हैं। अत: बाजरे में सतत विकास के कुछ लक्ष्य जैसे –एसडी जी 1(गरी बी नहीं), एसडी जी 2(जीरो हंगर),एसडीजी 3 (अच्छा स्वास्थ्य और कल्याण), एसडी जी 5(लिंग समानता), एसडी जी 8(सभ्य कार्य और आर्थिक विकास), एसडी जी 12(जिम्मेदार खपत और उत्पादन), एसडीजी 13(जलवायु कार्रवाई) में योगदान करने की क्षमता हैं। बाजरे के लिए अंतर्राष्ट्रीय वर्ष सरकार , किसानों और उपभोक्ताओं के लिए स्थायी कृषि और स्वास्थ्य आहार को बढ़ावा देने के लिए मिलकर काम करने का एक अवसर है। यह खाद्य सुरक्षा को बढ़ावा देने और ग्रामीण विकास का समर्थन करने का एक अवसर भी हैं। बाजरे के लिए अंतर्राष्ट्रीय वर्ष में विभिन्न गतिविधियां और कार्यक्रम शामिल होंगे।

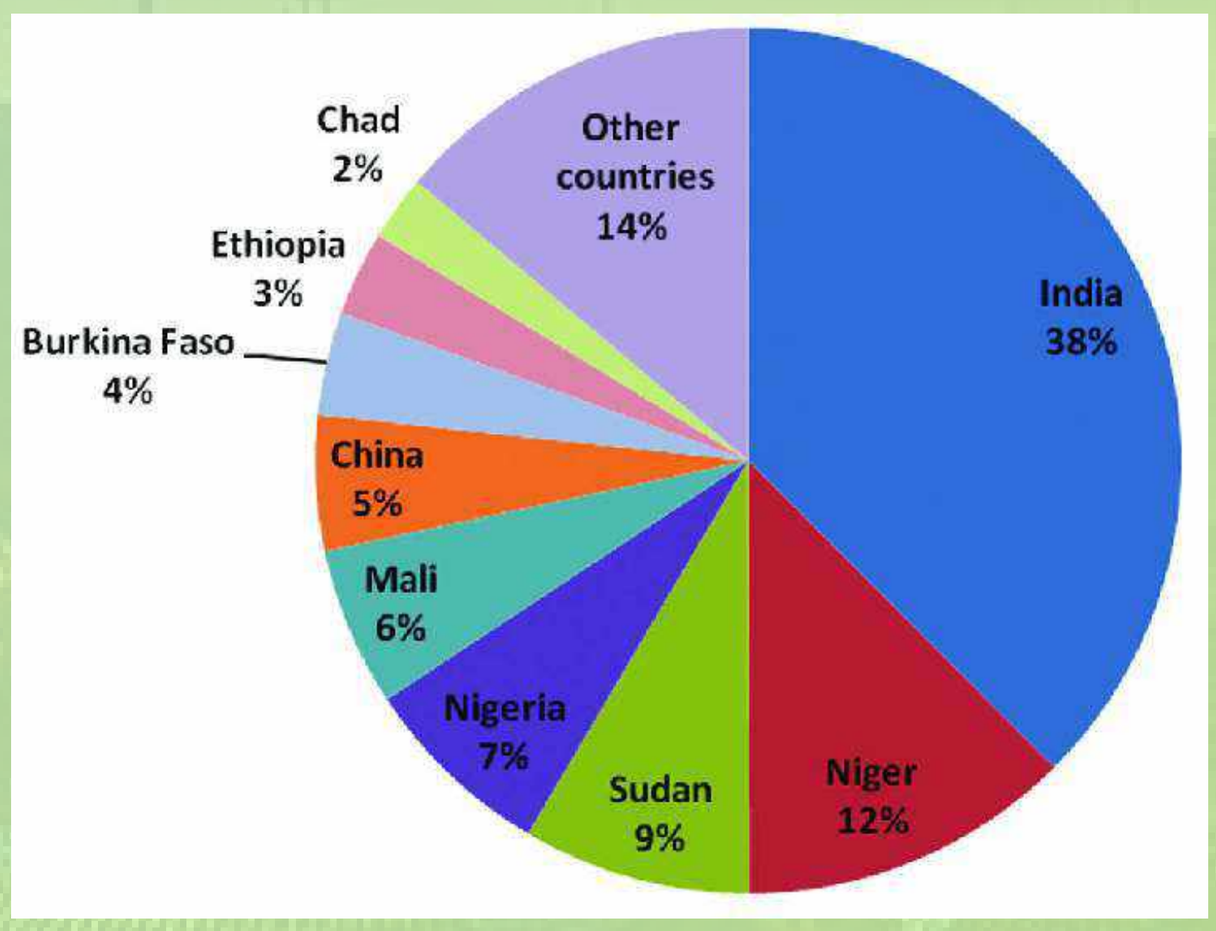
इनमें सम्मेलन, कार्यशाला और प्रदर्शनी शामिल हैं। इनके द्वारा बाजरे के लाभों के बारे में जागरूकता बढ़ाने और स्कूलों , अस्पतालों और अन्य संस्थानों में उनके उपयोग पर बढ़ावा देने पर ध्यान दिया जाएगा और आम जनता को अपने भोजन में बाजरे को शामिल करने के लिए प्रोत्साहित करने के लिए भी अभियान चलाए जाएंगे एंगे। अंत में, एसएसओ द्वारा बाजरे के लिए अंतर्राष्ट्रीय वर्ष की घोषणा टिकाऊ कृषि और स्वास्थ्य आहार को बढ़ावा देने की दिशा में एक महत्वपूर्ण कदम है। बाजरा एक मूल्यवान फसल है जो वैश्विक खाद्य प्रणाली के सामने आने वाली अनेक चुनौतियों जैसे बढ़ती वैश्विक आबादी और जलवायु परिवर्तन आदि का समाधान प्रदान कर सकती हैं। दुनिया भर के किसान और लाखों छोटे पैमाने के आजीविका का समर्थन करने में मदद कर सकते हैं। यह एक सामयिक और बहुत जरूरी पहल है जो खाद्य और कृषि क्षेत्र में सभी हितधारकों के समर्थन और जुड़ाव का हकदार हैं। अत: बाजरे के बारे में जागरूकता बढ़ा कर, उसके उत्पादन और खपत को बढ़ावा देकर, हम खाद्य सुरक्षा का समर्थन कर सकते हैं।हैं सांस्कृतिक विरासत संरक्षण कर सकते हैं और सतत विकास को बढ़ावा दे सकते हैं।।

17 मिलेट्स और भारत

RAJASHWI SAXENA

भारत वर्तमान में दोहरी ज़िम्मेदारी निभा रहा है - एक G20 प्रेसीडेंसी और दूसरा मिलेट्स को भविष्य की फसलों के रूप में स्थापित करने के मिशन को लेकर। संकुयक्त राष्ट्र ने वर्ष २०२३ को अंतर्राष्टीर्य मिलेट्स वर्ष घोषित कर तथा भारत को उसकी बागडोर सँभालने का सौभाग्य देकर दुनियाभर में किसानो की आशाएं बढ़ा दी हैं। यह सभी किसान उत्सुक तो हैं परन्तु इन्हे संसाधनों का आभाव है। इन्ही किसानो को बढ़ावा देने तथा विश्व को स्वास्थ का ज्ञान देने के लिए भारत इस ज़िम्मेदारी को अपने कंधो पे लेकर चल पड़ा है। मिलेट्स, वह बड़ी फसल है जिसे खाने तथा चारे के रूप में उपयोग किया जाता है। मोटा अनाज न केवल सवास्थ के लिए अत्यंत लाभदारी है परन्तु इसको कम उपजाऊ ज़मीन पर भी उगाया जा सकता है। इसको ना ही ज़्यादा पानी की आवश्यकता है और न ही खाद तथा अन्य उत्पादकों की। संयुक्त राष्ट्र ने सही समय पर भारत को यह ज़िम्मेदारी देकर एवं भारत ने इसकी प्रेसीडेंसी लेकर "ग्लोबल फ़ूड आर्डर" को सुधारने का निश्चित किया है।

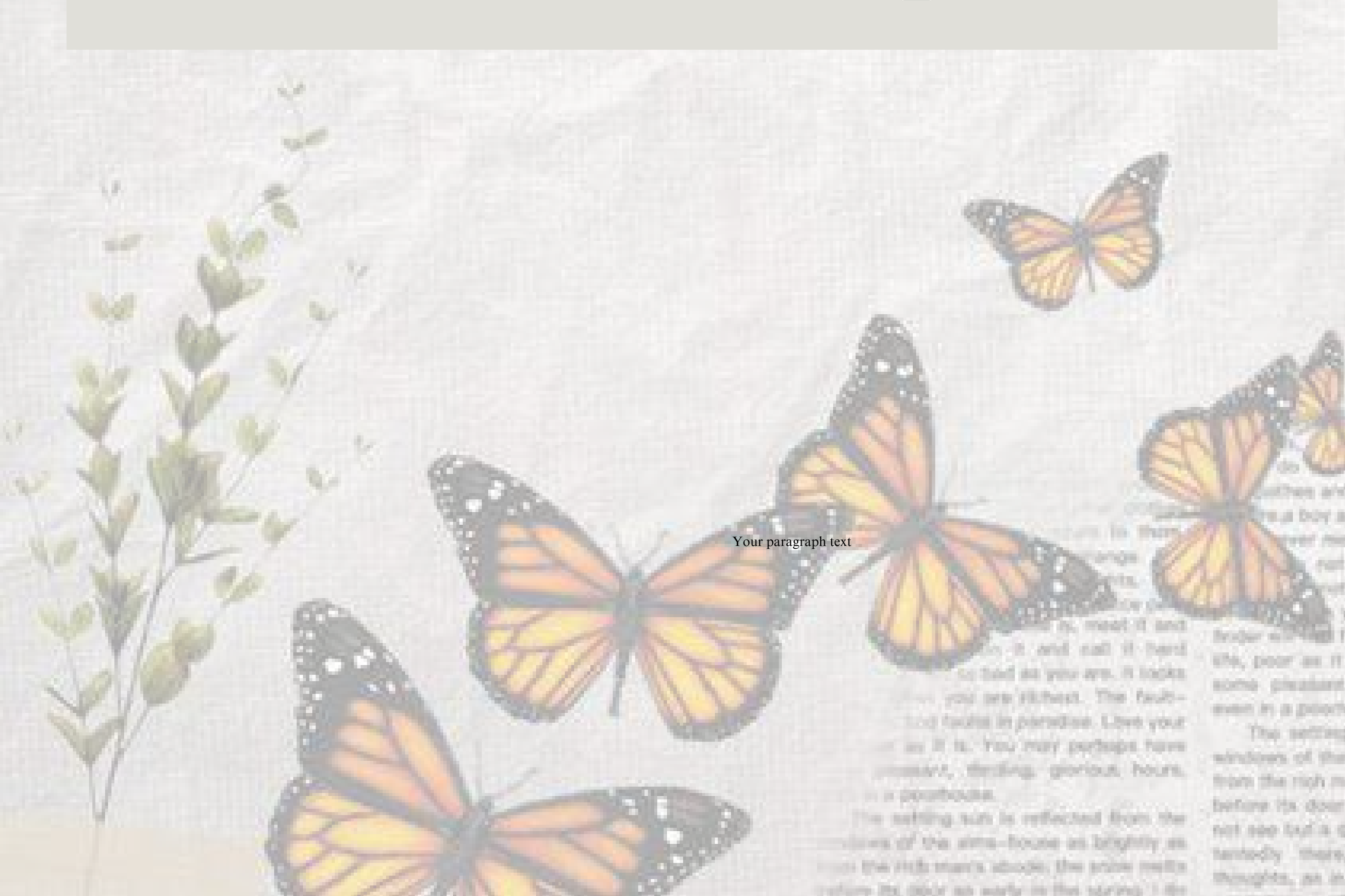
आज कल पूरी दुनिया प्रोटीन और प्लांट बेस्ड डाइट की ओर बढ़ रही है, ऐसे मे मोटे अनाज का उत्पादन एक क्रांतिकारक निर्णय है। ऐसे समय में मिलेट्स का प्रचार और लोकप्रियता गरीब मिलेट्स उत्पादक देशों के लिए बहुत सारे व्यवसायों के विकल्प की संभावनाओं को जन्म देता है। बाजरा वर्ष के परिणामस्वरूप इस फसल का अधिक और बड़े पैमाने पर उत्पादन होगा, जिससे निर्यात में काफी वृद्धि होगी। यह परिवर्तन इन क्षेत्रों के छोटे किसानों और उद्यमियों के लिए अच्छी आय के वादे के साथ ऐसे देशों की अर्थव्यवस्थाओं को सहारा देकर वास्तविक बदलाव ला सकता है। मिलेट्स एशिया और अफ्रीका के अर्ध-शुष्क कटिबंधों (विशेष रूप से भारत, माली, नाइजीरिया, चीन, नाइजर, इथियोपिया, सेनेगल, चाड और बुर्किना फासो) में महत्वपूर्ण फसलें हैं। इसके साथ ही समशीतोष्ण, उष्णकटिबंधीय और उष्णकटिबंधीय क्षेत्रों के शुष्क क्षेत्रों में भी अच्छे उत्पादन के लिए उपयुक्त हैं।



कोविद-१९ ने जब पूरी दुनिया को बेहाल कर दिया था, जब हर जगह भुकमरी, बेरोज़गारी , और उसके बाद रूस-यूक्रेन युद्ध ने पुरे विश्व को खाद्य सामग्री का आभाव करवाया, ऐसे में मोटे अनाज का महत्व सबके सामने आना एक बड़ा तथा प्रभवकारी निर्णय है। इससे दुनिया भर में विकासशील राष्ट्रों की अर्थव्यवस्था में वृद्धि होगी, सभी किसानो की आय में बढ़ोतरी देखी जाएगी, और सबसे महत्वपूर्ण, यह कमज़ोर रोग प्रतिरोधक क्षमता वाले लोगो के लिए एक बड़ी उम्मीद हैं। बाजरा के बारे में एक और दिलचस्प तथ्य यह है कि इसमें ग्लूटेन की कमी होती है और ग्लूटेन संबंधी विकारों से प्रभावित लोग इसका सेवन कर सकते हैं। मिलेट्स में 21वीं सदी की कई खाद्य समस्याओं का समाधान करने की अपार क्षमता है, जिससे यह भविष्य के लिए एक उपयुक्त खाद्य विकल्प बन गया है।

भारत अपने मिलेट लीडरशिप में पूरे उत्साह के साथ काम कर रहा है। मिलेट फेस्टिवल्स और इससे जुड़े कार्यक्रम देश के विभिन्न हिस्सों में आयोजित किए जा रहे हैं, जिनमें देश के भीतर और बाहर दोनों से लोगों की भागीदारी हो रही है। इन पोषक अनाजों के महत्व पर जोर देते हुए पीएम मोदी ने भी कहा था कि बाजरा का मनुष्यों द्वारा सबसे पहले उगाई जाने वाली फसलों में होने का गौरवशाली इतिहास रहा है। पोषक अनाजों के बारे में जागरूकता बढ़ाने और IYM 2023 के उद्देश्य को प्राप्त करने के लिए तब से लगातार प्रयास किए जा रहे हैं। ऐसी स्थिति में भारत की अध्यक्षता और भी महत्वपूर्ण हो जाती है, जो भारत को महत्वपूर्ण वैश्विक खाद्य चुनौती से निपटने के लिए एक अनूठा अवसर प्रदान करती है।

POETRY



Your paragraph text

DECEMBER 23RD

–Akshara sharma

Ohhoo Jinnee, it's December twenty-third!
Thanks a million,to the farmer outskirts:
Non-stop claps for their commendable hopes,
Please,stay the indicator of women's source of rope.

Ohhoo Jinnee, it's December twenty-third!
Frequently being called as food hub of the world,
Kudos to the animals whom they own,
Well , social security too plays an important role.

Ohhoo Jinnee, it's December twenty-third!
Deepest sorry for the farmhand's loss,
Somewhere monsoon being the threat all across,
C'mon kitten let's together nurture the real boss.

Ohhhoo Jinnee, it's December twenty-third!
Government's intervention desperately looks like a sweet curd,
Pradhan Mantri Krishi Sinchayee Yojana,well outfitted as a crunchy bird.

Ohhhoo Jinnee, it's December twenty-third!
Undoubtedly technology being the promoter of earth,
Thanks to the farmers for your uncountable efforts,
You be the greatest saviour of those preety dirt:
Yaya Jinnee, it's December twenty-third!

Among The Millet

- ABANTIKA PAL

The dew is gleaming in the grass,
The morning hours are seven,
And I am fain to watch you pass,
Ye soft white clouds of heaven.

Ye stray and gather, part and fold;
The wind alone can tame you;
I think of what in time of old
The poets loved to name you.

They called you sheep, the sky your sward,
A field without a reaper;
They called the shining sun your lord,
The shepherd winds your keeper.

Your sweetest poets I will deem
The men of old for molding
In simple beauty such as a dream,
And I could lie beholding,

Where daisies in the meadow toss,
The wind from morn till even,
Forever shepherd you across
The shining field of heaven.

A PROFESSION OF HOPE

-Riya Pandey

A farmer is a magician who
Produces money from the mud

If you are today,thanks a farmer
They work for 365 days and
that too without any holidays

Once in your life,you need a
doctor, a lawyer,a policeman
but everyday,thrice a year,you need
a farmer.... respect every farmer

Farmers feed your family,
then take a second job so that
they can feed their own family

Today we give thanks
For the food on our tables,
The clothes on our back,
And the farmer who make it possible

Small seeds

-Sneha Rani

Small seeds with small amount of needs
That cures major diseases and a healthy
lifestyle guaranteed..

The one we eat.... are not that great
Just spending money and gaining fat

Amount of people are very mere
Who knows the kind of millets here.

Now India is spreading benefits of all
Ragi, Kukam, Jawar, Bajra and many more

The very note I want to convey
We should prefer millets anyway.

Millets : The Ultimate Companion

-Prabha

Small in size,high in fibre
Keeps you and your health
Away from all the odds,
That's is the power a millet holds
Heat and drought resistant
Millets are the best for cultivation,
Easy to grow, easy to consume
At the end..
Millets are the ultimate companion.

अंजान अनाज

–कंचन देवी

सब एक दूसरे को सुनने की होड़ में हैं !
आंख मूंद कर अंधेरी दौड़ में हैं ,
शरीर को कोई सुनना नही चाहता हैं।
दुनिया भर की बाते सही है,
उनका शरीर ही उनको गलत बताता हैं।
हम जानना चाहते हैं भूगोल गणित इतिहासकारों को
न जाने कितने समझदारो को.....
समझ गए हमारे भारतीय पैदावार की नहीं हैं?
समझ हमे हमारे अनाज परिवार की नहीं हैं।
भर मुट्ठी में अनाज कोई पूछले हमसे,
तो हमें उनके नामों का अता पता नहीं हैं ।
मत कोसो अपनी बुद्धि को इसमें,
आपकी कोई खता नहीं हैं ।
क्योंकि हम पढ़ते हैं उतना ही जितना ,
हमें कागज पर उल्टना होता हैं।
पढ़कर तीन चार पन्ने बहस में,
किसी की बातों को पलटना होता हैं।
जब हम अनाज को स्पर्श कर जानने लगेंगे,
बुद्धि शांत होजाएगी हम शरीर और प्रकृति को पहचानने लगेंगे
पहचान बैठी जो शरीर से एक बार.....
फिर क्या दोष ? क्या बीमारी
एक बार विचार कीजिए आपकी होड़ हैं समस्या सारी।।

नाम मेरा मोटा अनाज

-Aastha

सुपरफूड कहते थे मुझको पर नाम मेरा मोटा अनाज,
सिर्फ तीन दशक तक पहले तक था यहां मेरा स्वराज।।
सभ्यता जितना मेरा इतिहास, परम्परा का था एक अलग अंदाज
था मैं पोषण का पावर हाउस, तुम सबको था मुझपर नाज़
सुपरफूड कहते थे मुझको पर नाम मेरा मोटा अनाज।।
प्रधानमंत्री जी की पहल पर संयुक्त राष्ट्र ने IYM का किया आगाज़
72 देशों में अब मेरा आयोजन, अब हूं मैं जन जन की आवाज़
अब मुझे ढूंढ रही है दुनिया क्योंकि पोषक तत्व का मैं पुखराज।
रागी, ज्वार , बाजरा, कोदो है मेरा साज,
सुपर फूड कहते थे मुझको नाम मेरा मोटा अनाज।।
हरित क्रांति से पहले मेरे जन मानस का था एक अलग अंदाज़
बंद करो अब हाइब्रिड अनाज ,लाओ पुरानी सेहत ताकत
और शांति करो उत्पादन पोषक युक्त अनाज,
सुपरफूड कहते थे मुझको पर नाम मेरा मोटा अनाज।।

मेरी आवाज

—ज्योति यादव

मैं वही हूं जिसे खून पसीने से सींचा था
बड़ा हो जाने पर भगवान को भोग लगाया था
राजा–महाराजा ने जिसे खाकर दुश्मनों से प्रजा को बचाया था
स्वतंत्रता सेनानियों ने गोरों से आजाद करवाया था
आज भी उतनी ताकत, साहस , शौर्य जिंदा है मुझमें
बस मेरा मालिक बदल गया.....

चला दिया तकनीक का पहिया मुझ पर
मेहनत ना हुई तो कीटनाशक छिड़क दिया
अब न खाना मुझे क्यूंकि मैं तो मर गया.....

अरे ! मैं तो वही दाना हूं , जिसे हाथ से पिसा जाता था
जिसे खाकर किसान खेत में कमाता था,
जीता था सौ साल, बिना किसी बीमारी के
चहाते हो तुम भी अगर उसी की तरह जीना
तो छोड़ दो बंद पैकेट का खाना.....

वक्त हैं अभी करलो कुछ सुधार
ऑर्गेनिक खेती भी ही एक सुधाव
जीने दो मुझे फिर से उसी रूप में
जैसा था मैं "सोने की चिड़िया" के काल में
सुन रहे हो ना? मेरी आवाज.....

मेरे देश का किसान

–मानसी

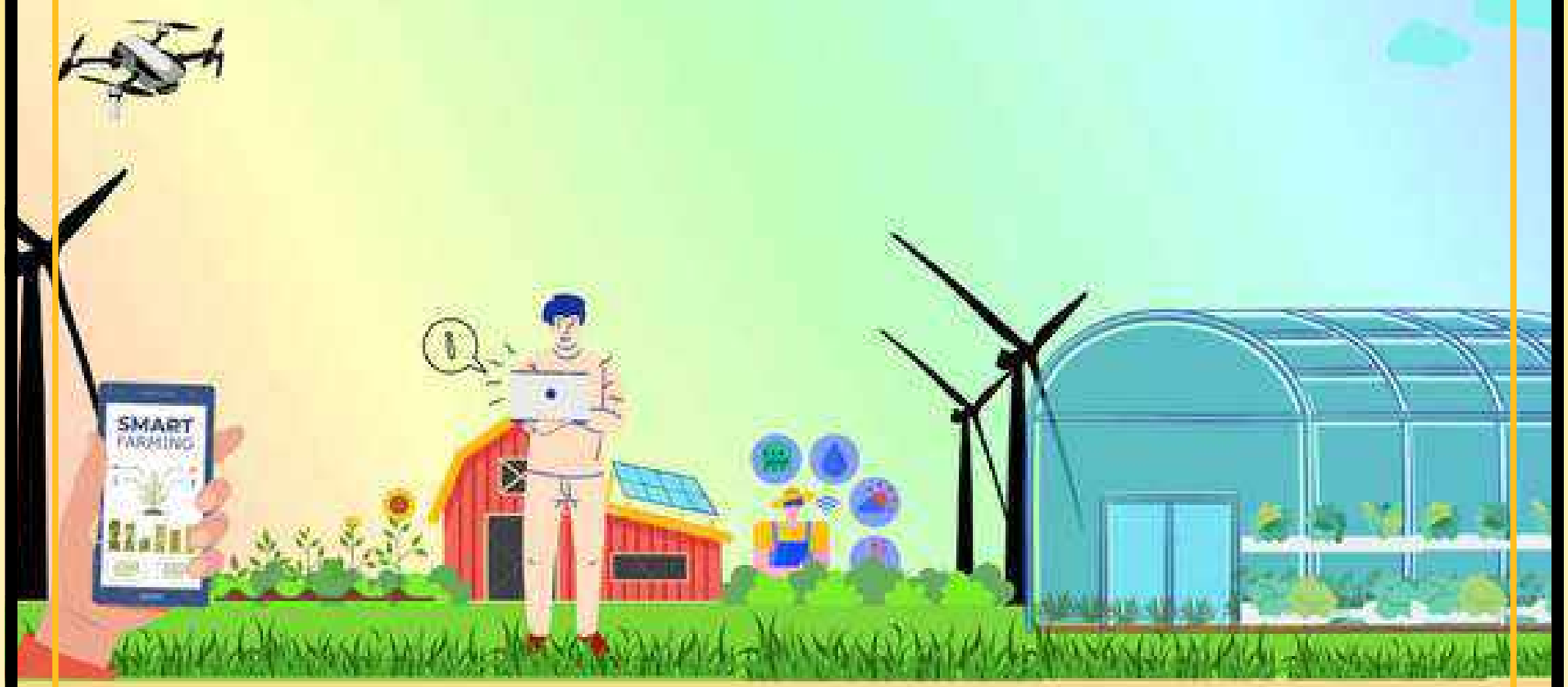
कि वो एक ही इंसान हैं,
जो मेहनत और परिश्रम का बलवान हैं,
लेकिन क्या करे वो बेचारा उसकी जिंदगी में मौसम बलवान है।
हजारों लोगों के लिए मानो वो भगवान हैं,
वो कोई और नहीं मेरे देश का किसान हैं.....

कैसे वो चैन से सो जाए ,
अपनी ही पीड़ा में जो खो जाए।
उसपर लाखों करोड़ों बच्चो का भार है ,
उसी से चलता हर कोई बाजार है ।
इन लाखों का पेट पालने वाला आज कितना परेशान हैं ,
अरे हां! वो ओर कोई नही, मेरे देश का किसान हैं.....

दिल के कुछ राज वो किसी को बता नहीं सकता,
उसके उजड़े हुए गुलदस्ते को,वो किसी को दिखा नहीं सकता।
महफ़िल में चाहे वो खुद को कितना ही हंसाए,
लेकिन तन्हाई में दिल के दर्द वो खुद से ही कैसे छूपाए ।
रो रोकर अपनी ही खराब हुई फसल का हर बार दे सरकार को ध्यान,
अरे हां! वो और कोई नहीं , वो हैं मेरे देश का लाचार किसान।।

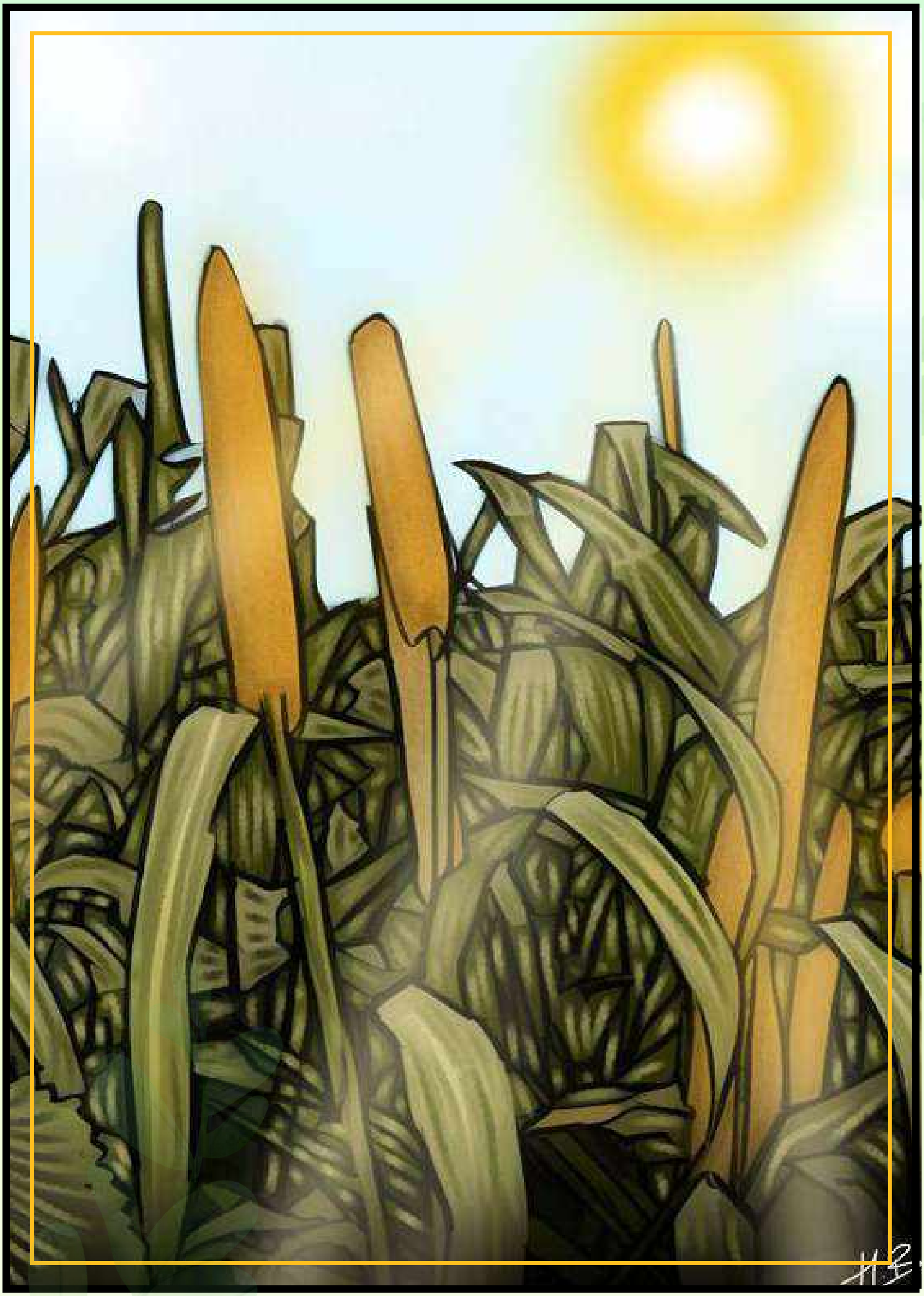
POSTERS

INDIA'S GROWTH IN AGRICULTURE



NANDINI

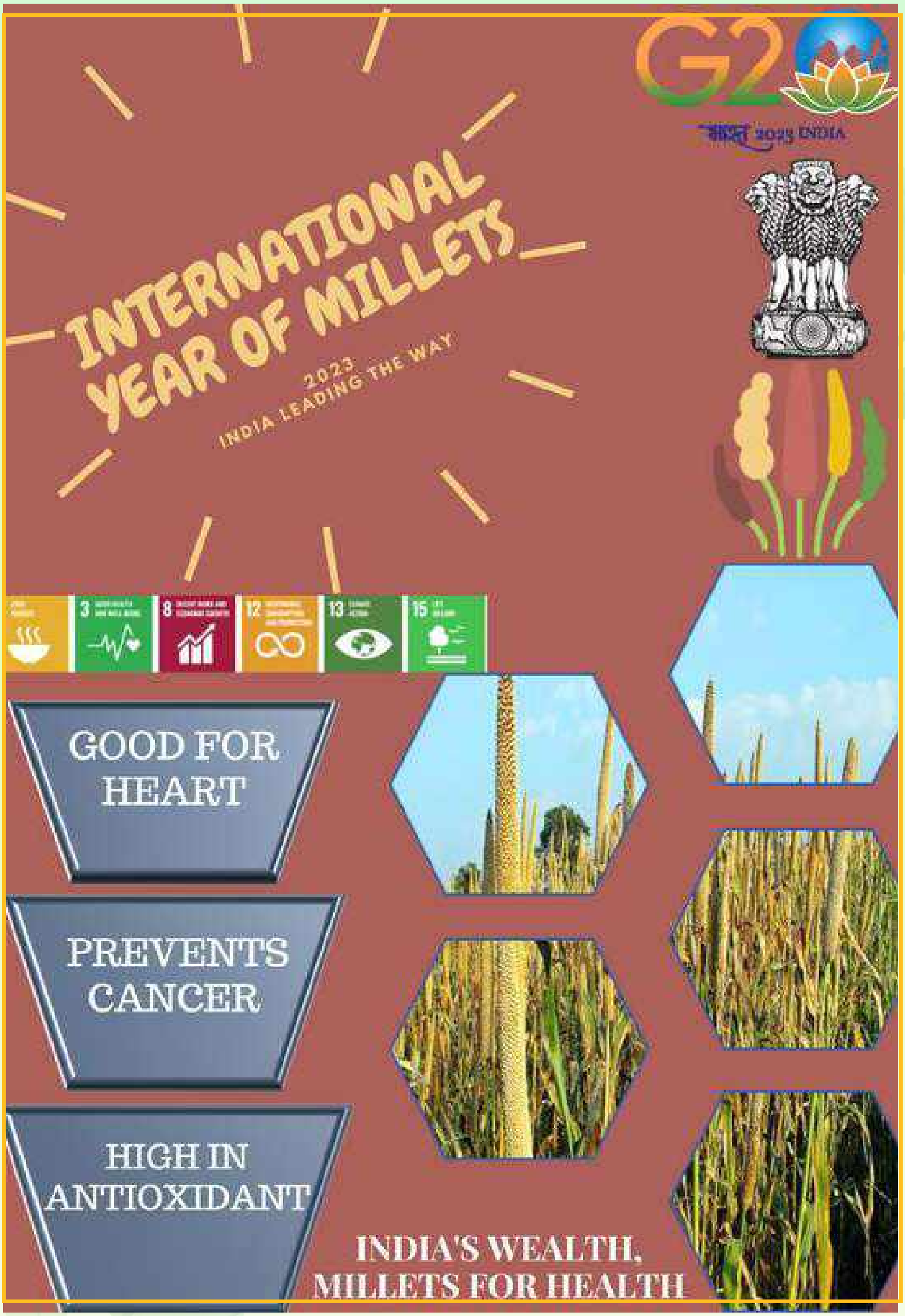
2nd YEAR



HIMANI BAL
2nd YEAR

3. POONAM
2nd YEAR
INDRAPRASTHA COLLEGE FOR WOMEN

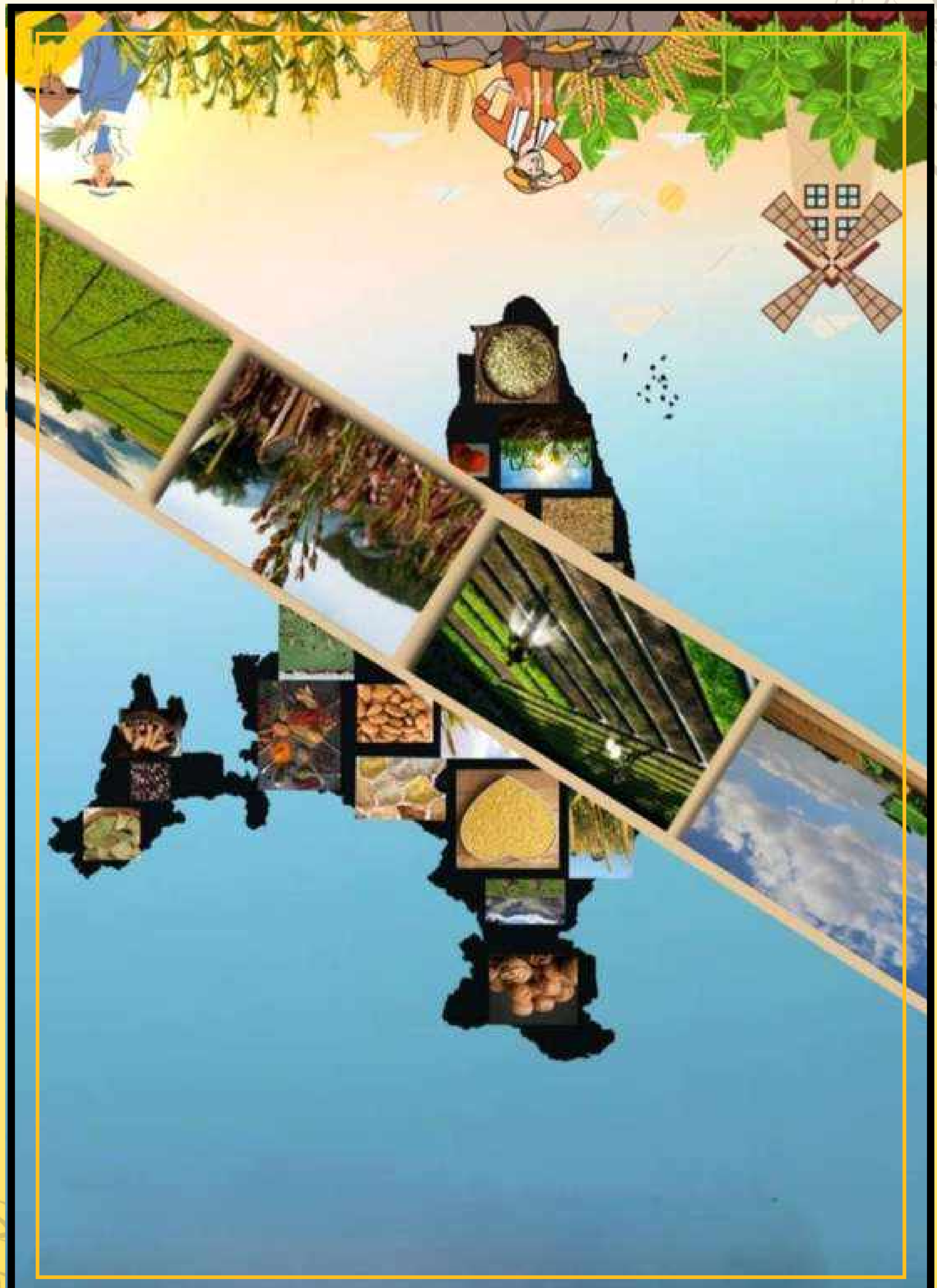
4. AARUSHI SAPRA
3rd YEAR



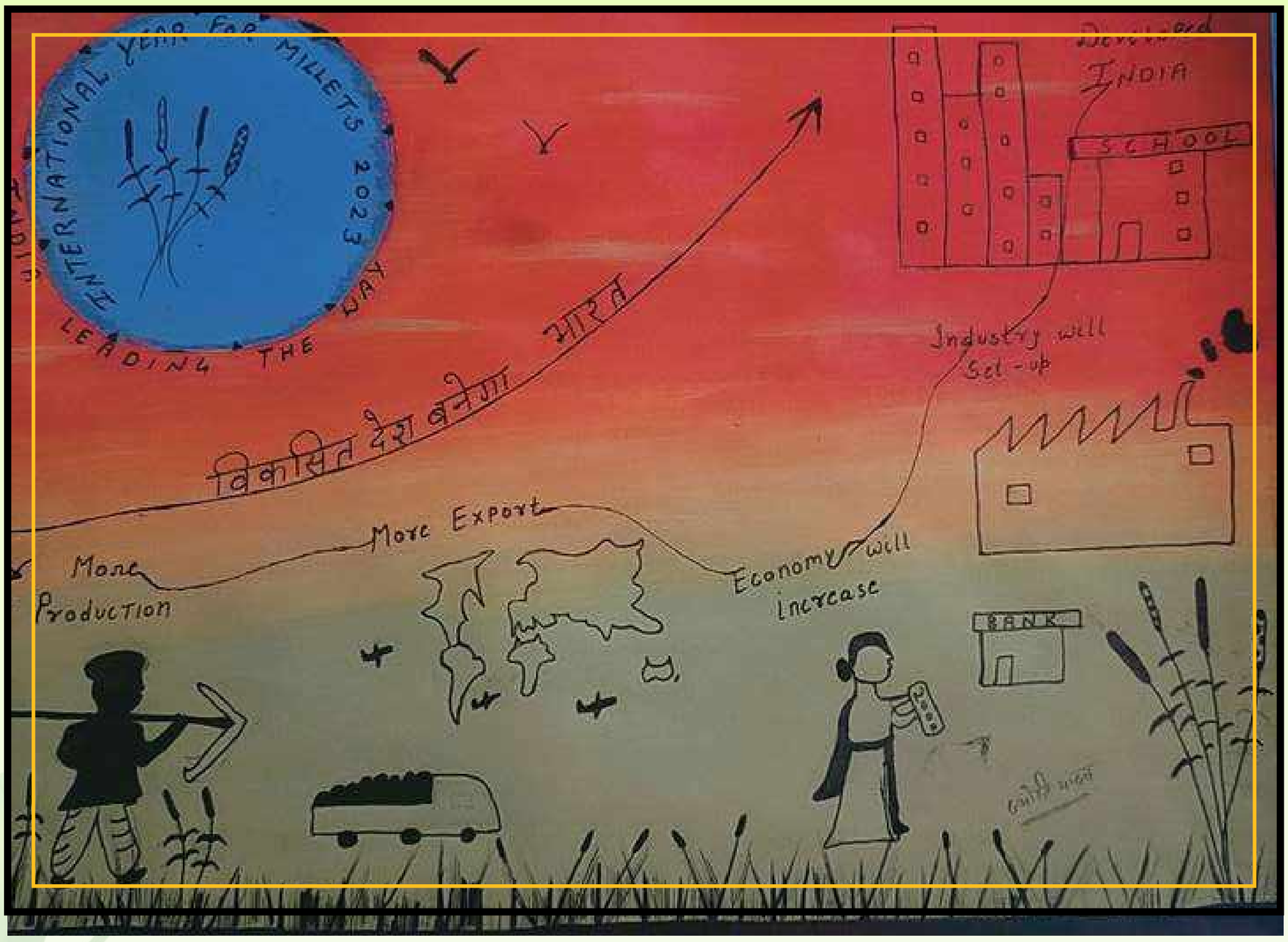
BHAVYA MANGLA
1st YEAR

NANDINI

2nd YEAR



PALLAVI PARDHI
BA PROGRAM



JYOTI YADAV
3rd YEAR

International year of millets 2023

Millets productivity

1111 Kg/ha (2013-14)

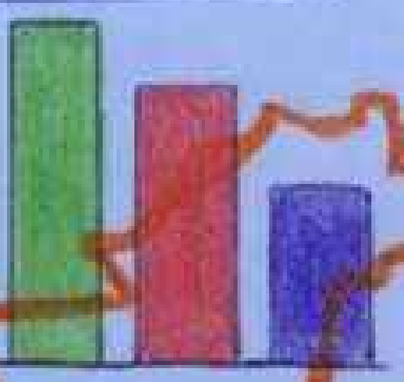
1436 Kg/ha (2021-22)

Leading states in terms of Area

Rajasthan: 1371.93 (000'ha)

Maharashtra: 1146.60 (000'ha)

Karnataka: 564.05 (000'ha)



पोषक अनाज हैं गुणों का खज़ाना,
सस्ता - सुगम है इसे खेतों में उगाना।

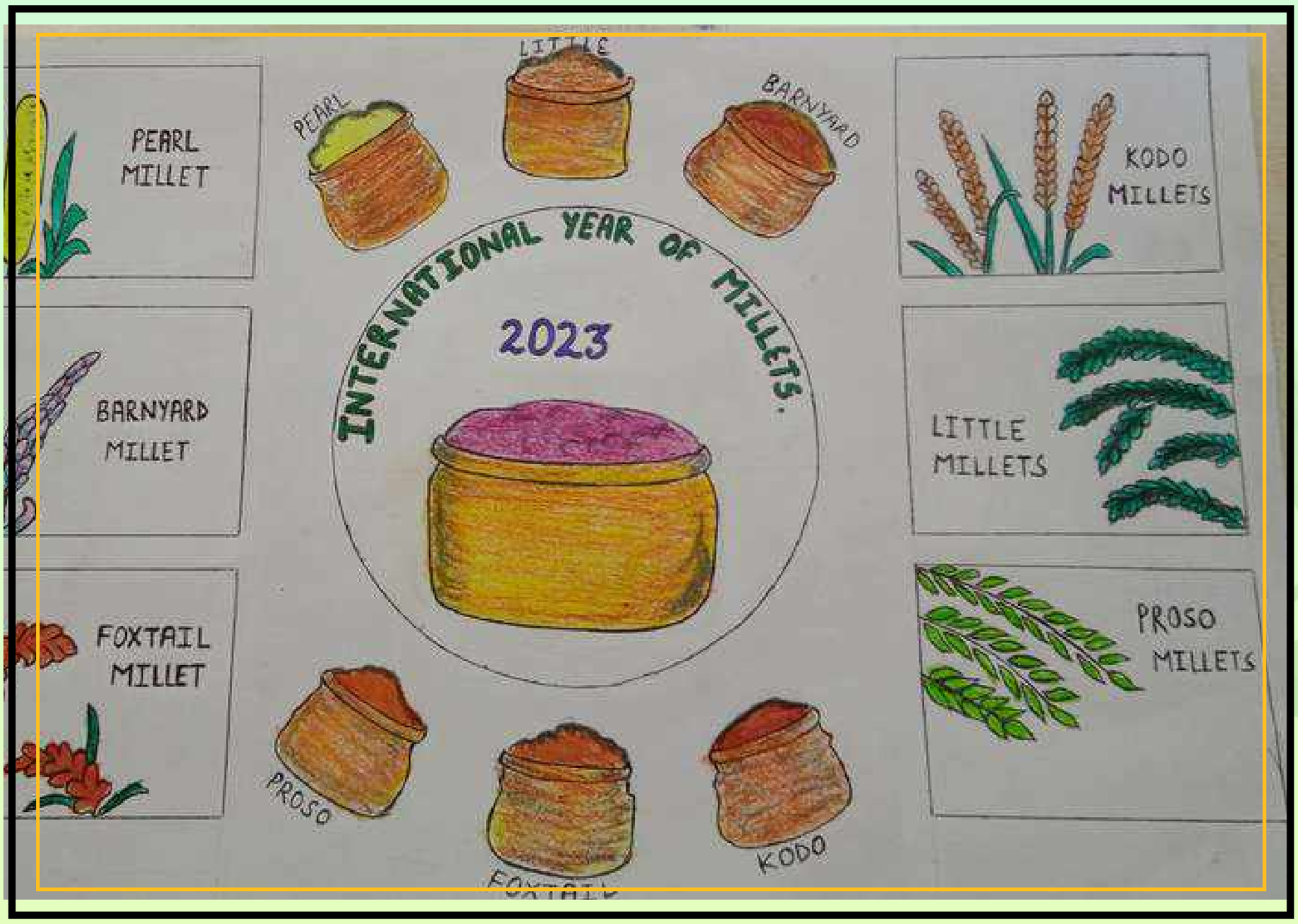
EXPORT (USD Million)

45.86 (2017)

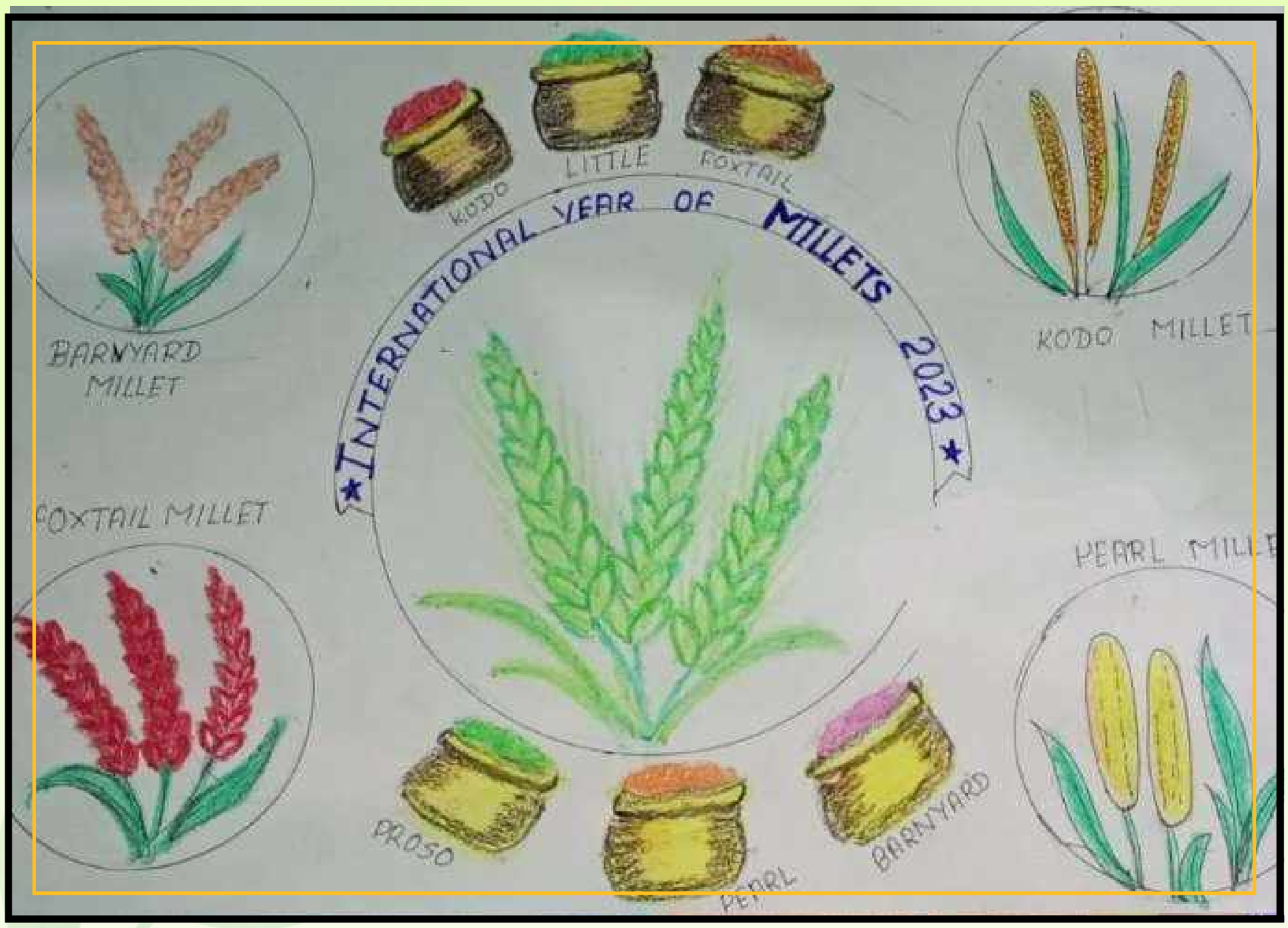
66.48 (2021)

स्वस्थ थाली मिलेट वाली
स्वास्थ्य राज, पौषक अनाज

TANNU SINGH
BA PROGRAM



SAKSHI
BA PROGRAM



ANSHIKA SINGH
BA PROGRAM

NEESHA

2nd YEAR

Quiz, Crossword, and WordHunt

QUIZ

1. When did India propose International Year of Millets 2023 to the UN?

a. 2016 b.2017
c. 2018 d. 2019

2. Who approved the proposal by India?

a. Food & Agricultural Org b. WHO
c. World Food Programme d. UNDP

3. Which is the nodal agency for the IYoM 2023?

a. Ministry of Commerce & Industry
b. Ministry of Human Resource Development
c. Ministry of Food Processing Industries
d. Ministry of Agriculture & Farmers Welfare

4. When will the 18th G20 summit 2023 take place in New Delhi ?

a. 9th-10th September b. 10th-11th October
c. 11th-12th November d. 12th-13th December

5. When is Mandia Dibas (Millet Day) observed in India?

a. September 26th b. July 21st
c. November 10th d. March 19th

6. Which state other than Chhattisgarh & Rajasthan had been allocated in January for caring out specific activities and promotion of IYoM?

a. Assam b. Nagaland
c. Manipur d. Mizoram

7. Which organisation is focussing on increasing the productivity of millets?

a. NITI Aayog b. ICRISAT
c. IARI d. ICMR

8. What is the scientific name of Pearl Millet?

a. Panicum miliaceum b. Pennisetum glaucum
c. Echinochloa frumentacea d. Setaria italica

9. What is the full form of MIIRA?

a. Millet International Institution for Research & Association
b. Millet International Initiative for Research & Association
c. Millet International Initiative for Research & Awareness
d. Millet International Institution for Research & Awareness

10. The highest thiamine content in millets is found in _____?

a. Pearl Millet
b. Kodo Millet
c. Foxtail Millet
d. Proso Millet

11. Alongside India, how many countries have supported IYoM?

a. 72 b. 70

c. 89 d. 63

12. When did the Agricultural Ministry declare jowar, bajra, buckwheat, etc. as 'Nutri-cereals

a. May 19th, 2018 b. April 10th, 2018

c. December 20th, 2018 d. September 18th , 2018

13. Who has said that food regulator FSSAI will formulate guidelines to include millets in the food menu of schools, hospitals, etc?

a. Jagat Prakash Nadda b. Mohsina Kidwai

c. Motilal Vohra d. Mansukh Mandaviya

14. 'Chai Piyo aur Kulhad Khao' is the initiative taken by which community of farmers to create eco-friendly and edible kulhads made of millets?

a. Bandio Farmers b. Madhepura Farmers

c. Deoria Farmers d. Unnao Farmers

15. In which state is the Millet Mission campaign launched?

a. Jharkhand b. Rajasthan

c. Andhra Pradesh d. Odisha

16 Who is the father of Millet Revolution?

a. P.V. Satheesh b. M.S. Swaminathan

c. Radha Mohan Singh d. Dr. Khadar Vali

17. Who is the father of Millet Man of India?

a. P.V. Satheesh b. M.S. Swaminathan

c. Radha Mohan Singh d. Dr. Khadar Vali

18. Where did the UN organise the opening ceremony for the IYoM 2023?

a. Moscow, Russia b. New Delhi, India

c. Rome, Italy d. Washington DC, USA

19. Which book includes 6000 varieties of millet grains in varying colours?

a. Millets in your diet b. Millets in your meals

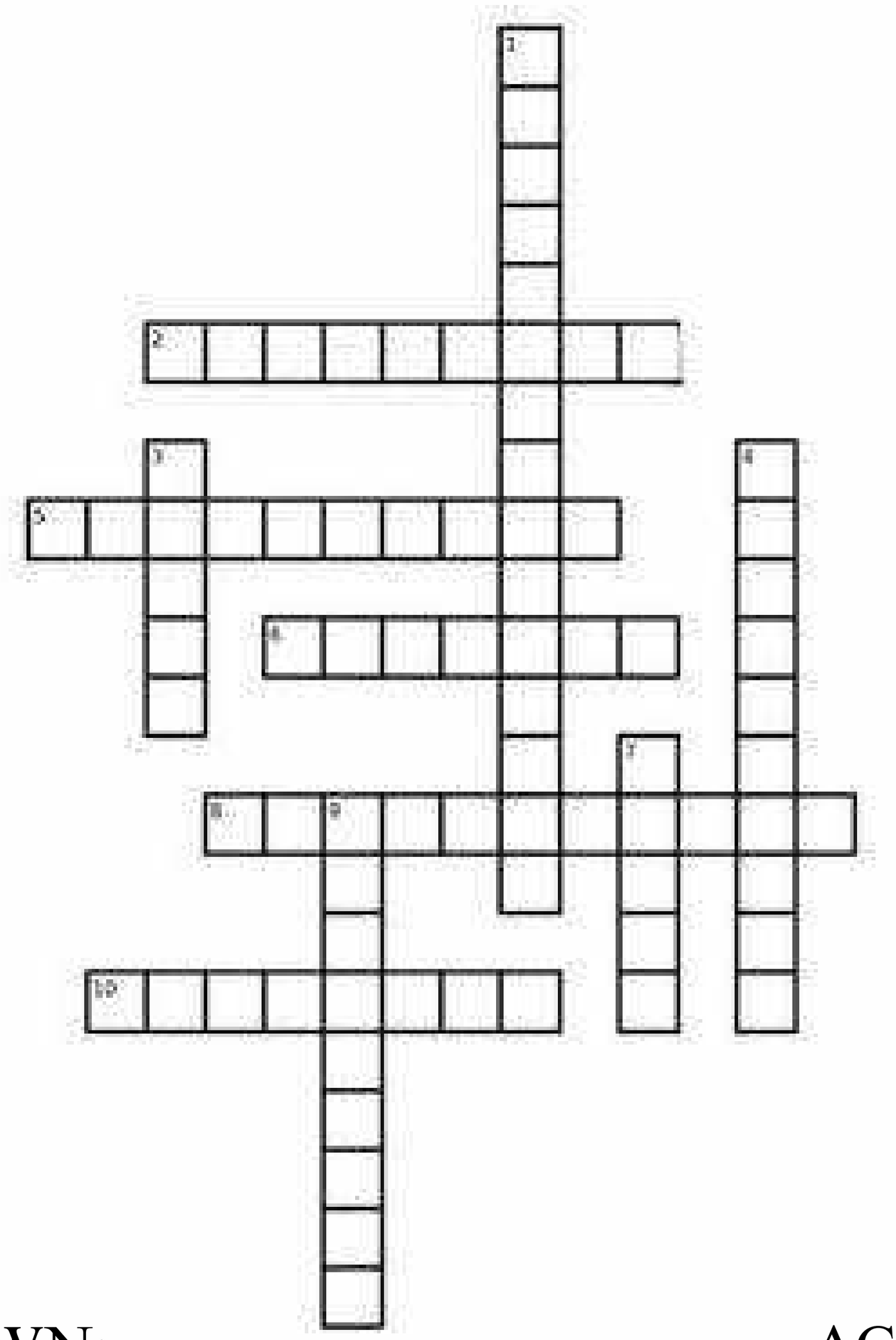
c. Millets- The Healthy Lifestyle d. The Treasury of Millets

20. Amongst the most important cereal grain in the world, millets stand at which rank?

a. 6th b. 7th

c. 8th d. 9th

CROSSWORD



DOWN:-

1. What is the theme of 2023. International year of Millets?

2. Which is most cultivated in. India?

4. Government of India has declared to celebrate the IYM as a_____so that Indian millets, recipes and. Value- added products are accepted globally?

7. Where did the Food and. Agricultural organization FAO of the. UN, organization an opening ceremony for the International year of millets 2023?

9. Which state is leading in Millets. production in India?

ACROSS :-

2. Name the millet - "kuttu"

5. Millet is which type of. crop (rabi or kharif crop)

6. Which istheInternationalb. crop of 2023?

8. The technique which. enhance the shelf life of. millets?

10. India's Finance Minister announced the union. Budget in Feb. 2023 , she. referred to millets as _____.

WORD HUNT

M A T U L S R P K J Y N B X S
Q E Y G R A C P M O F R I L U
F D A S H U Y J A U C N O A S
M H M O T N A V R P D L F N T
M C J M H E D G H I E A X O A
K E V U W S L P A J D L T I I
L L A T X O F L H V X N M T N
X W M Z Q N V Z I S G O T I A
C E O J W O V P O M Z J U R B
R T M V Q O F R O M L L I T L
S P Q H V M G U W S O R M U E
H Q R K J H S P H B H R A N J
I V G K U B L X T U S A L E P
F P T M J J L O W P M P N N P
B O M X T R N D X Q L G H D H

QUESTIONS:-

1. Which millet is most useful for heart and diabetes patient?
2. Which millet is known as Italian Millet ?
3. Millets have _____ high value.
4. Which country is the largest producer of millets in the world ?
5. Another name of little millets?
6. Millets have high/low glycemic index ?
7. Millets are _____ crop.
8. Millets included under which mission by Ministry of women and child Development?
9. Jowar is known as _____.

ANSWERS TO QUIZ

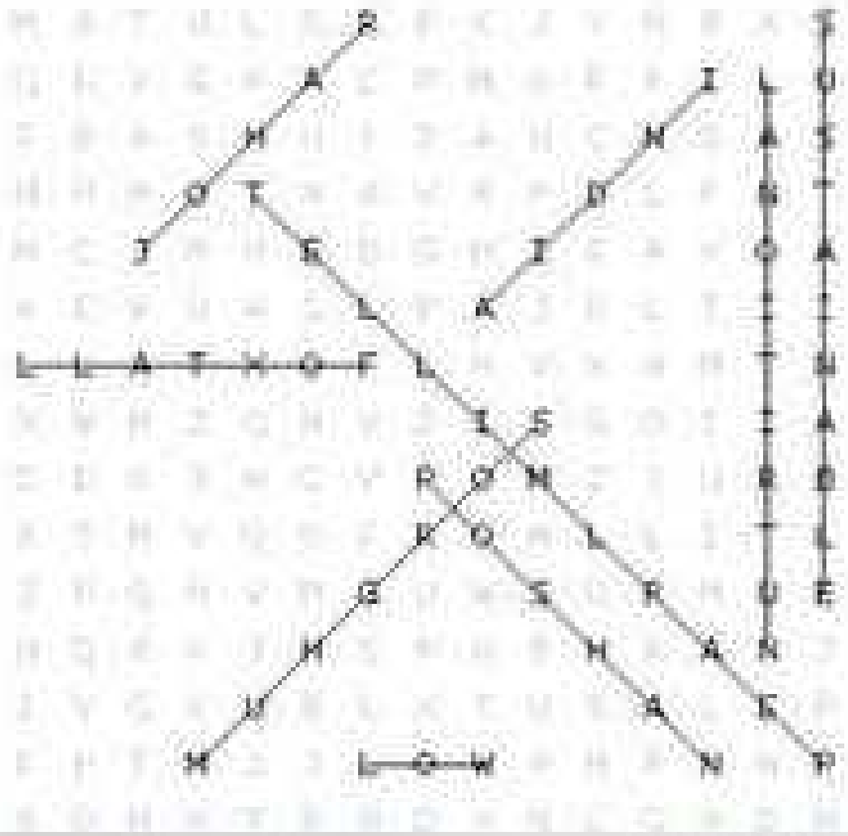
1. 2018
2. Food & Agricultural Organisation
3. Ministry of Agriculture & Farmers Welfare
4. 9th-10th September
5. November 10th
6. Mizoram
7. ICRISAT
8. Pennisetum glaucum
9. Millet International Initiative for Research & Awareness
10. Foxtail Millet
11. 72
12. April 10th, 2018
13. Mansukh Mandaviya
14. Deoria farmers
15. Odisha
16. P.V Satheesh
17. Dr. Khadar Vali
18. Rome, Italy
19. Millets in your meal
20. 6th

Answers to Crossword

1. People's Movement.
2. Buck wheat
3. Bajra.
4. Jan Andolan.
5. Kharif Crop.
6. Millets.
7. Italy.
8. Germination
9. Rajasthan.
10. Shri Anna.

Answers to Word Hunt

1. Foxtall.
2. Pearl millets.
3. Nutritional.
4. India.
5 Jowar.
6. Low.
7. Sustainable.
8. Poshan Abhiyan
9. Sorghum.



EVENTS OF 2022-23

Farewell of Batch 2022

The Student Council, Department of Geography, Shyama Prasad Mukherji College for Women, University of Delhi organized 'Geo-Grads', the farewell batch of 2022 on 20th April, 2022 from 11.30 am onwards at the College Foyer. The event was hosted by Dishita Prasad, (2nd year) and Varsha Kumari, (2nd year). The seniors were warmly welcomed by a melodious Saraswati Vandana performed by Dorothi Das and Sneha Sengupta. Ms. Anuradha Shankar enlightened the students by her words of wisdom. As life progresses, it's important to always be a goodperson. A good personality will take one to great heights. She recalled the time of the seniors getting admission into the department. Everyone was excited and enthusiastic. Ma'am concluded her kind words with a motivating quote, "Work hard, Work Smart". Dr. Gargi Kar Majumdar blessed the ceremony with her generous words, stating that the future ahead would provide everyone with a lot of new opportunities and the amazing people around.

Dr. Ankur Srivastava presented his kind words by wishing them their very best. He added saying that as a student, the batch has passed the first stage of their academic journey. The three years spent at the college has been a foundation of the personality which will reflect in the further academic journey. Ms. Maansi Malik ecstatically thanked the seniors for the well wishes they have been sending her. The respect, ma'am and the students have for each other is tremendous. The academic journey can be hard but with support of the teachers and friends, the stress can be lightened. Mr. Arif Hussain commenced his kind words with wishing the outgoing batch a happy academic path. Sir presented a self-written poem which literally meant that one can fly with bright colours in their journey with the help of their courage and morals. Mr. Shanshank Singh graced the gathering with his generous words. He said "As we step into the second transition of our journey, it will be all about how we carry ourselves forward and tackle the challenges we'll face. At any moment where you feel stuck, just remember all the courage you showed to the hurdles to pass over it and which brought you to the present stand". The Student Council of the session 2021-22 appreciated the efforts put up by the Faculty, Committee Heads and the students from 2nd and 1st years for presenting great event. As they followed the legacy of their seniors, the council wanted the students to become a part of the next student council and leave a better legacy. As a student, it's vital to be participate in societies and events which will polish skills, making you a better self. Last but not the least they congratulated their fellow batchmates for their new beginning. A musical piece was presented by the 2nd years and 3rd years. Starting with the calm tune of the golden era, they gradually traced to the hyping Gen Z rhythms and everyone grooved to the music. Our hyper-energetic 1st years presented a retro themed dance performance which had the grooving vibes. Cartwheels and splits in the performance dazed everyone. With everyone, sailing into the happy vibes of the programme, 2nd years presented a dance performance which got everyone tapping their feet. From Aaja Nachle to the trending Tik-Toks, the audience was overwhelmed. A game titled as "Musicoholic" was organized where our seniors and faculties participated enthusiastically. As music instruments were played one by one, the competition got tougher and everyone was getting super competitive. The anchors faced the wrath of the competitiveness of the seniors. A ramp walk was organized for the title of Miss Farewell. The seniors graced the stage with their elegance and confidence. A common question was asked to every participant and the answers were witty and diverse. The event was concluded with the results of Game and the ramp walk. A Vote of Thanks was then presented by Cherry Chaudhary.

QGIS TRAINING WORKSHOP

On 14th September, 2022 Department of Geography, Shyama Prasad Mukherji College for Women, University of Delhi organized "ONE DAY QGIS TRAINING WORKSHOP". It was a full day workshop. Convener of the workshop was Md. Arif Hussain and Co-Convener was Mr. Shashank Singh. The workshop was graced by Associate Professor Dr. Pankaj Kumar, Department of Geography, Delhi School of Economics, as the Resource Person.

Before the event started, students from 2nd and 3rd year decorated the whole department for welcoming our chief guest. Everyone had an enthusiastic energy and eagerly waited for the event to start.

Finally, the event started when Dr. Pankaj Kumar arrived in the department. The candle lighting was done by Dr. Pankaj Kumar and all the other faculty members. A very beautiful Saraswati Vandana was sung by students. After that, TIC of the department, Dr. Rachna Dua welcomed Dr. Pankaj Kumar with a planter. She enlightened everyone with her speech, welcomed the chief guest and also told the importance of GIS and Remote Sensing in today's world. She also requested Dr. Pankaj Kumar to provide internships for students.

Md. Arif Hussain, introduced Dr. Pankaj Kumar and also highlighted his achievements. Dr. Pankaj Kumar enlightened all the students and gave some introduction to GIS and Remote Sensing. He shared his experience of trainings he had given in different schools and colleges. He also introduced some institutions for our future reference.

After a short tea break, Dr. Pankaj Kumar started the session with the introduction to QGIS software. Sir described components and user interface, QGIS tools and plugins. After the introduction, sir started demo (part1) for QGIS software. He gave introduction of Gateway to Download Satellite Image: USGS & Bhuvan. He taught about layer stacking, subset clipping, atmospheric correction, false color composition (FCC) and satellite image interpretation. It was completely knowledgeable, interesting and fun at the same time.

After the lunch break, sir gave demo (part2) of QGIS software.

He gave complete description of Normalized Difference Vegetation Index (NDVI), reclassification and layout designing. Students were performing the same on their PCs. Everyone was enjoying doing such an interesting task. After the completion of the task, sir explained application of Remote Sensing and GIS in Disaster Management. Sir was sharing his personal experiences of fieldwork.

At last, sir took a doubt session in which students asked their doubts and sir was answering all the questions.

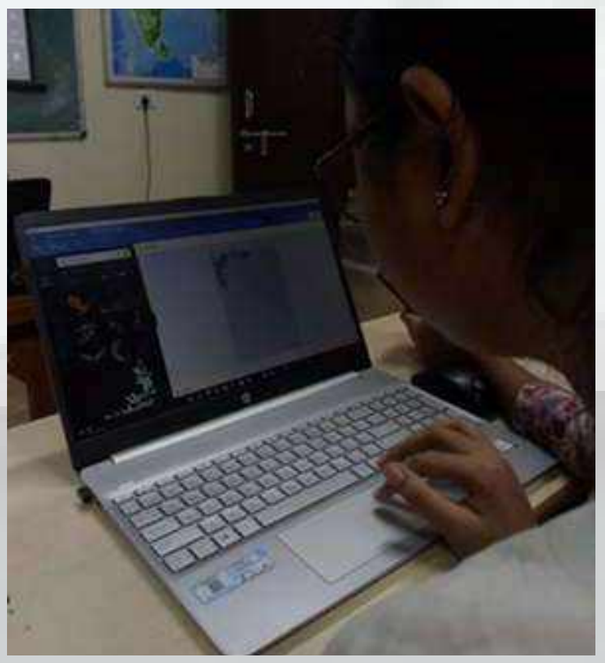
Finally, the workshop came to an end. The experience of this full day workshop was always rememberable. It was really interesting to learn new skills and get to know about new software.

CANVA TRAINING WORKSHOP

On 21st September 2022 Department of Geography, Shyama Prasad Mukherji College for Women, University of Delhi organized "SKILL ENHANCEMENT WORKSHOP ON CANVA". It was a one-hour workshop. The workshop was convened by Cherry Chaudhary, Disha Rawat, and Himani Bal. Everyone had enthusiastic energy and eagerly waited for the event to start.

Finally, the event started and the President of the Geography Department commenced the program. She enlightened everyone on the importance of technical skills in today's world. She was followed by Disha Rawat, coordinator of the Social Media committee, who, is indeed an affluent user of Canva and embraced the participants with its techniques of it.

Himani Bal, a member of the Cultural Committee, looked after the doubts of the participants and helped every student with the indefinite options of Canva. The participants were then given a task to design a poster for the event International Peace Day. It was then the workshop came to an end. The experience of this workshop was commendable. It was really interesting to learn new skills and get to know about the new applications.



ORIENTATION PROGRAMME 2022

Department of Geography welcomed the freshers of batch 2022-2026 by applying the pious ‘Tika’ on their foreheads and with flowers. A welcome song was presented by Sneha Sen Gupta and Daniya Sultan (3rd Year). Dr. Rachna Dua ma'am gave her heartiest congratulations to the freshers and guided them with her words of wisdom. Followed by the welcoming, a presentation was presented by our President, Cherry Chaudhary where she talked about all the whereabouts of the college and the department and introduced the Student-Council of the Geography Department to freshers.

Anuradha Shankar ma'am gave her congratulations and told them the importance of leading a disciplined life, which makes a way for success. Aakash Upadhyay sir presented all the scopes of Geography and gave a detailed insight about the New Education Policy.

The intellectual session was followed by a beautiful dance performance by Amunshi Sharma from 2nd year. Then Gargi Mazumdar ma'am gave a glimpse of the subjects and classes’ schedule. Mansi Malik ma'am, Ankur sir, Shashank sir, Arif sir and Amit sir also addressed the gathering. An interesting, and fun game was then hosted by Rajashwi Saxena(2nd year) and Nitya Chaudhary (3rd year) for freshers. One of the first-year students named Aakriti came up to share her thoughts and thereafter the first-years were taken for a college tour.

The event was summed up by Prem Prakash sir by giving a concluding speech followed by the distribution of chocolates to the freshers and wishing them luck for their forthcoming escapade.

FRESHERS OF BATCH 2022-2023

The Department of Geography, Shyama Prasad Mukherji College for Women, University of Delhi, organized a successful fresher's event for the new batch. It was a two-hour event organized on 18th January 2023 in which the whole Geography Department participated and contributed in the best possible way. Everyone was vigorous and eagerly waited for the event to start. Faculty members started the event by lighting up the lamp, the department was introduced and the choir of 3rd and 2nd-year students sang Saraswati Vandana to welcome the new batch. The event was commenced by an anchor -Vedika, Ishika, Harshita, and Adity of 3rd and 2nd year.

Dr. Gargi K. Majumdar (student and faculty advisor) announced to start the event by welcoming students and telling them to learn and take part in various extra curricular activities. Ms. Maansi Malik also welcomed the new batch with enthusiastic words and urged them to enjoy their college life. Dr. Ankur Srivastava gave their best wishes for academics, Dr. Aakash Upadhyay welcomed freshers and asked students to learn new things on their journey to graduation. Mr. Prem Prakash encouraged the students and emphasized the importance of hard work in life and to utilize their upcoming four years of graduation. The event further entered into its main joyous stage in which 2nd-year students presented a steamy Bollywood dance performance, and freshers stating their various types of fashion style, clothing, and ramp walk with an introduction based on the Retro "Rock n Roll" theme for 'Miss Geography 2022-23', in which Aishwarya was first runner up, Sneha was second runner up, and Shenaz became the next "Miss Geography 2022", on the basis of questioning round of selected students by Aakash sir and Mansi mam. Shenaz acquainted us with traditional values and culture.

The choir of (the 3rd and 2nd years) presented a melodious singing performance. The Third year student presented an enthusiastic dance performance in retro style, adding colors to the event. It was then followed by the meet-up of freshers with the student council.
The motivational speech by President Cherry Choudhary,
Vice President Aarushi Sapra and a Vote of Thanks by General secretary Kaashvi Chaudhary. The event successfully ended with cake cutting ceremony followed by meal.


FEATURING THE CLASS OF 2022


Rock 12 Roll


Rock 12 Roll

FIELD TRIP TO UDAIPUR, RAJASTHAN

BY- RAJASHWI SAXENA

A trip to Udaipur(Rajasthan) was organized for the students of 2nd year by the Department of Geography to complete the objective of our research on "Post-Covid Revival of Tourism in Udaipur". Rajasthan, the country's westernmost state is one of the most beautiful regions with varying topography and rich heritage. Udaipur, located in the heart of Rajasthan, is a historical city reflecting the rich cultural background and the importance of religion in every aspect.

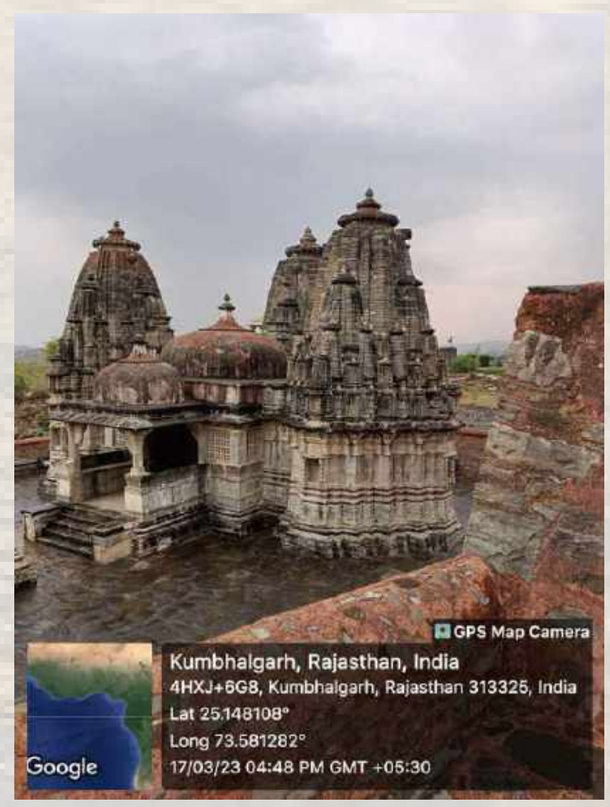
We reached Udaipur on the morning of 16-03-2023, had breakfast at the hotel, and left for our first destination, "Jagdish Temple". Situated right in the middle of Udaipur, Jagdish Temple is a big tourist attraction in the Old City of Udaipur. Standing firm and robust, it can be seen at a distance of 150 meters from the city palace's Bara Pol. The temple has become a significant monument in the past few decades owing to its unique location, beauty, and history associated with it. It was the first location where we surveyed the people and recorded their opinions. It was then that we walked up to the "City Palace". One of the architectural wonders of Rajasthan, the City Palace in Udaipur is the largest palace complex in the state. The most popular sightseeing place in Udaipur, City Palace stands magnificently on the eastern banks of Lake Pichola. Flanked by the Aravali mountain range, City Palace is worth admiring for its natural settings that offer a breathtaking view of the surroundings. We got to know about the historic and strategic importance of the palace. After lunch, we headed back to our hotel and after a couple of hours, we were offered the most amazing part of the trip- The Boat Ride in Lake Pichola. Named after the nearby village of Picholi, Lake Pichola is one of the most famous tourist attractions in Udaipur.

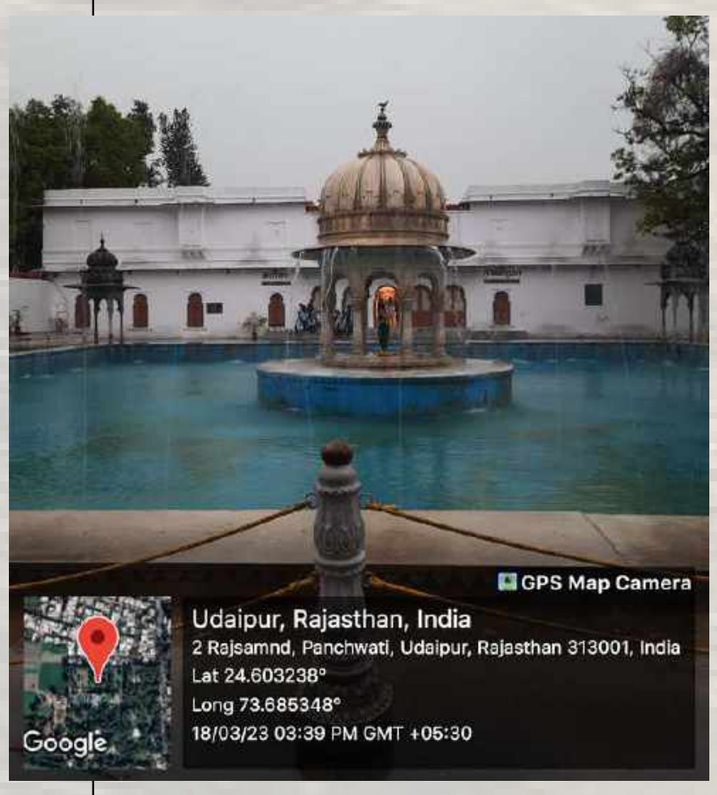
Flanked by islands, palaces, temples, mansions, ghats, and restaurants, Lake Pichola offers something for everyone. The enchanting views of sunrise and sunset from the lake are something that should not be missed by anyone visiting the lake. After the boat ride, we surveyed a few more people employed there.

The second day commenced with us traveling to the Haldighati Museum. Haldighati is a mountain pass in the Aravalli Range of Rajasthan in western India that connects the Rajsamand and Pali districts. The museum dedicated to Maharana Pratap holds a unique position in the history of India. His unique example of combating the mighty Mughals, with meager manpower, is rare in the history of the world. The light and sound show was the cherry on top. The next destination was "Kumbhalgarh Fort" Located 84 km north of Udaipur in the wilderness, Kumbhalgarh is the second most important citadel after Chittorgarh in the Mewar region, cradled in the Aravali Ranges. The inaccessibility and hostility of the topography lend a semblance of invincibility to the fort. Most of the surveys were done at these two sites. With a sudden change in the weather, we headed back to our hotel. Later, a DJ Night was arranged, where we captured the memories which would be cherished forever.

It was on the third day we checked out of the hotel and left for “Lake Fatehsagar”. Lake Fatehsagar is located at an astonishing location offering three world feels- the hills, water, and flora. Situated north of Lake Pichola right across Moti Magri Hill, Lake Fatehsagar is the second-largest artificial lake. Apart from the boat rides, the site also offered us horse and camel rides.

We also did a few surveys there. Next, we visited “Bhartiya Lok Kala Mandal”. It is a cultural institution engaged in studying folk art, culture, songs, and festivals and popularising and propagating them. The institution has a museum that exhibits a collection of folk articles from Rajasthan like rural dresses, ornaments, puppets, masks, dolls, folk musical instruments, folk deities, and paintings. There is a puppet theater (Kathputli) too where puppet shows are held at regular intervals. The last destination was “Saheliyo ki Bari”, which is embellished with several fountains in the four water pools along with chiseled kiosks, and elephants made up of marble. Out of many, the most noted features of the garden are the bird fountains and lotus pools. The moment you enter the garden, you can witness flowerbeds, lush green lawns, and marble pavilions, which create a pleasing ambiance. We then had our lunch and left for Railway Station and traveled back to Delhi. On the morning of 19-03-2023, we reached Delhi, completing the most memorable and applauded trip.





A FIELD TRIP TO JODHPUR, RAJASTHAN

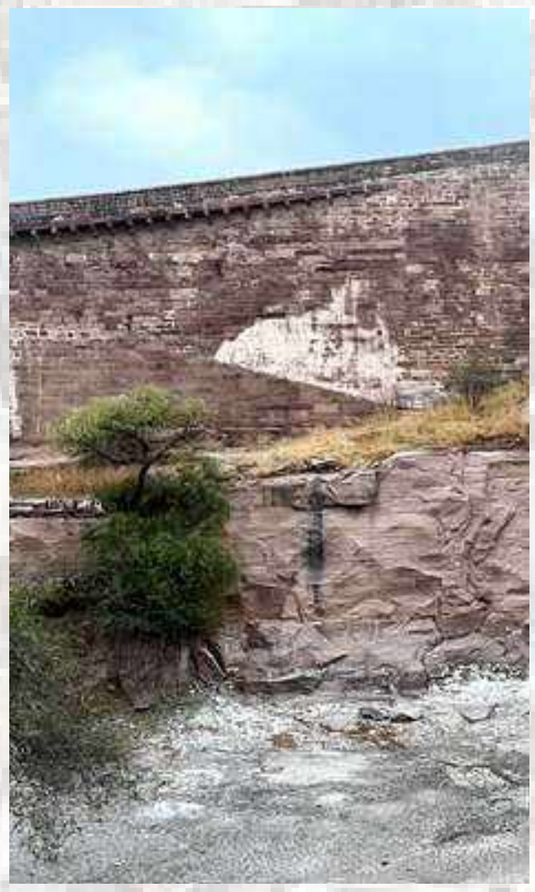
BY- VARSHA

A trip to Jodhpur (Rajasthan) was organized for the students of 3rd year by the department of geography to complete the objective of our research on " drought vulnerability and socio-economic impact assessment of drought in Jodhpur, Rajasthan" Jodhpur, also known as the "Blue City" of Rajasthan, India, is a popular tourist destination known for its rich history, culture, and architecture. Recently, a team of experts conducted a trip to Jodhpur to assess the impact of drought on the region and evaluate its current water situation. The purpose of this report is to provide an overview of the trip and the findings of the drought assessment. During the trip, the team visited various places in Jodhpur to gather data and assess the drought situation. The team visited the famous Mehrangarh Fort, a majestic fort perched on a hilltop, which offered panoramic views of the city. The team also explored the Umaid Bhawan Palace, a grand palace known for its stunning architecture and rich heritage. The Jaswant Thada, a marble cenotaph, was another site visited, known for its intricate carvings and serene ambiance. The team also visited the Ghanta Ghar, or the Clock Tower, a bustling market area known for its vibrant atmosphere and local handicrafts.

The students conducted an in-depth assessment of the drought situation in Jodhpur. They found that the region has been facing severe water scarcity due to low rainfall and over-extraction of groundwater. The team observed that many local water bodies, such as lakes and ponds, were drying up, and the water levels in wells were alarmingly low. The vegetation cover was sparse, and the agricultural fields appeared dry and barren, indicating the adverse impact of drought on agriculture and the livelihoods of the local communities. The team also spoke with local farmers, who shared their struggles in cultivating crops due to inadequate water availability. Many farmers reported crop failures, loss of livestock, and economic distress due to the drought. The students also interacted with residents, who expressed concerns about the shrinking water resources and the need for sustainable water management practices. Furthermore, the students examined the existing water management infrastructure in Jodhpur, including dams, canals, and water supply systems. They observed that some of the infrastructure was outdated and not effectively utilized, while others were facing challenges in maintenance and operation. The students also reviewed government policies and programs related to water management and drought mitigation and identified the need for coordinated efforts among various stakeholders to address the pressing water crisis in Jodhpur.

Based on the findings of the drought assessment, the team recommends the following measures to mitigate the impact of drought in Jodhpur:

- Improved Water Conservation: Promote water conservation practices, such as rainwater harvesting, watershed management, and efficient irrigation techniques, to optimize water use and reduce wastage.
- Sustainable Agriculture: Encourage farmers to adopt drought-resistant crops, use micro-irrigation methods, and practice crop rotation to minimize the impact of drought on agriculture.
- Groundwater Management: Regulate and monitor groundwater extraction to prevent over-extraction and promote sustainable groundwater management practices.
- Infrastructure Upgradation: Invest in upgrading and maintaining water management infrastructure, such as dams, canals, and water supply systems, to improve efficiency and effectiveness.
- Awareness and Education: Conduct awareness campaigns and education programs to sensitize local communities about the importance of water conservation, sustainable agriculture, and responsible water use practices.
- Policy Support: Advocate for policy reforms, including effective water governance, stakeholder participation, and integrated water resources management, to address the water crisis in a comprehensive and coordinated manner.



The trip to Jodhpur revealed the severity of the drought situation in the region and the need for urgent action to mitigate its impact. The recommendations provided in this report highlight the importance of sustainable water management.


Department of Geography
hyama Prasad Mukherji College
University of Delhi

GEOGRAPHIES OF GENDER: Issues, Approaches & Experiences

The Department of Geography, Shyama Prasad Mukherji College for Women successfully organized a special lecture session on "GEOGRAPHIES OF GENDER: Issues, Approaches & Experiences" on the 12th of April, 2023 to spread awareness amongst the youth. The convenor of the event was Dr. Rachna Dua and co-convenor was Md. Arif Husain and Mr. Prem Prakash. The event was graced by a distinguished speaker Prof. Anindita Datta, Head of Department of Geography, University of Delhi.

Prior to the inauguration of the event the 1st, 2nd and 3rd years along with Mr. Amit, our Lab Assistant collectively worked for the decoration in conjunction with the rangoli. The event was coordinated and hosted by Ms. Cherry Chaudhary and Ms. Dishita Prasad from 3rd year. The session commenced with the "Lighting of the Lamp" ceremony by the guest of honour and the faculty members of the department.

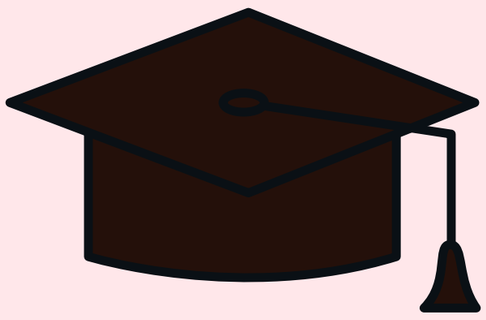
"Within you is the light of a thousand suns". The melodious segment embarked on with the Saraswati Vandana by the students of 2nd and 3rd years. Followed by the introductory segment, Prof. Datta was welcomed with a planter by Dr. Rachna Dua accompanied by Ms. Cherry Chaudhary and Ms. Varsha from 3rd year. Dr. Rachna Dua opined on the importance of issues related to gender in the society. She elucidated on the early life of Prof. Anindita Datta, expressing her views of how she has travelled to many parts of the country thus revealing her interests in the field of Geographies of Gender.

Prof. Anindita Datta discerned her knowledge to the students of how to make utmost use of the mobility infrastructure and the links between gender and space. She prodigiously remarked about the gender roles shaped by space. She begun with a significant question about the safety and concerns regarding women quoting examples from her personal experiences. She also mentioned about how our strategies need to be fluid. She highlighted about the inclusion of a course in the UGC model Syllabi (2001)- Geographies of Gender. She effectively talked about the various stereotypes that existed across the world and gender disparities faced by men, women and trans-genders of the society.

The symposium was wrapped up with an enthusiastic interactive session by the students and Faculty members of the Department making it an alluring session for both the audience and the guest. The event was successfully winded up with a vote of thanks by Ms. Anuradha Shankar and Dr. Rachna Dua.

OUR ACHIEVERS

Congrats!



KEEP SHINING

DISHITA PRASAD
(2nd YEAR)

1st position in University
CGPA- 9.36
(2021-22)

RIMA
(3rd YEAR)

2nd position in University
CGPA- 9.32
(2021-22)

Congrats on your Milestone!

Student Achievement Award and Certificate of Appreciation by West District, Delhi Police

DISHITA PRASAD

2nd Year

Department of Geography

Hello everyone,

Receiving these Awards came as an unexpected call for me. I had no idea about the recommendation of my name. I am very grateful to Principal Ma'am.

Apart from this, I have a long list of people who've supported me , my Parents, Brother, and Faculty.

I have done nothing new but would like to suggest attending classes regularly, and approach faculty, incorporating the points suggested. It becomes frustrating at times to maintain consistency but it's all worth it.

I would like to sum up by saying, "Don't be like me, rather be a better version of me".

Thank you!

EDITORIAL TEAM

VARSHA

Editor

Let us join hands in promoting the consumption of this traditional grain and help create a healthier and more sustainable world.

RAJASHWI SAXENA

Co-Editor

Think about it: If there is a health food section in the grocery store, what does that make the rest of the food sold there

NANDINI

Co-Editor

"Millets: The secret weapon of health enthusiasts", the solution to a healthier diet.

ABANTIKA PAL

Sub-Editor

It's time to embrace the golden crop of india , packed with absolute Nutrition-MILLET

MANSI SHARMA

Sub-Editor

Millet is a good source of protein, fiber, key vitamins, and minerals with numerous potential health benefits

AAKRITI

Crossword and wordhunt Head

We are the people who know how to live with nature and with this let's make the world aware about millets and it's importance blessed by nature .

AISHWARYA

Quiz Head

From history, millet revolutionization led the way to the future. Millets burgeoning out to empower future milieu.

PRABHA

Quiz Head and Translator

This year let health be your groundwork of all happiness.

STUDENT COUNCIL

CHERRY (PRESIDENT)

Let us celebrate this ancient grain, which has stood the test of time and is now poised to lead us towards a more sustainable and healthy future

AARUSHI (VICE-PRESIDENT)

We are proud of India's leadership in promoting the cultivation and consumption of millets, and we encourage everyone to explore the many delicious ways to incorporate millets into their diets

KAASHVI (GENERAL SECRETARY)

With the promotion of sustainable farming practices and the recognition of the nutritional and ecological benefits of millets, they are now making a comeback.

AASTHA (TREASURER)

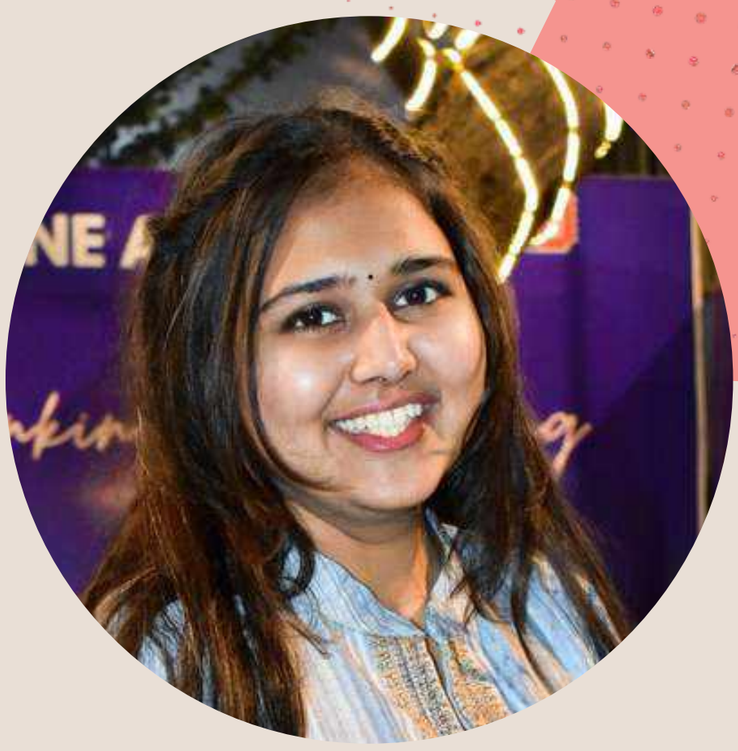
Millets are a valuable and sustainable crop that can play a significant role in promoting food security, nutrition, and sustainable agriculture globally. The G20 countries have recognized the potential of millets and have committed to supporting their development and use.

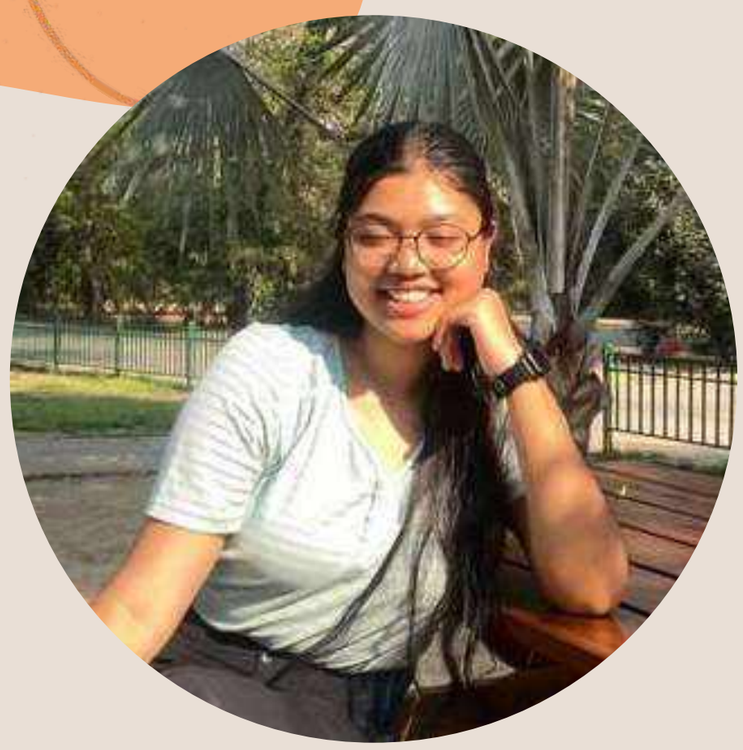
SROTASWANI (CULTURAL TEAM COORDINATOR)

LITTLE MILLET: THE TINY WONDER GRAIN WITH BIG HEALTH BENEFITS

MITANSHI (CULTURAL TEAM CO-COORDINATOR)

The recognition of the importance of millets by the international community, including the G20, is a positive step towards promoting sustainable agriculture and addressing global challenges.





DOROTHI (CULTURAL TEAM MEMBER)

Next time you are looking for a nutritious and sustainable food option, consider adding millets to your diet!

HIMANI (CULTURAL TEAM MEMBER)

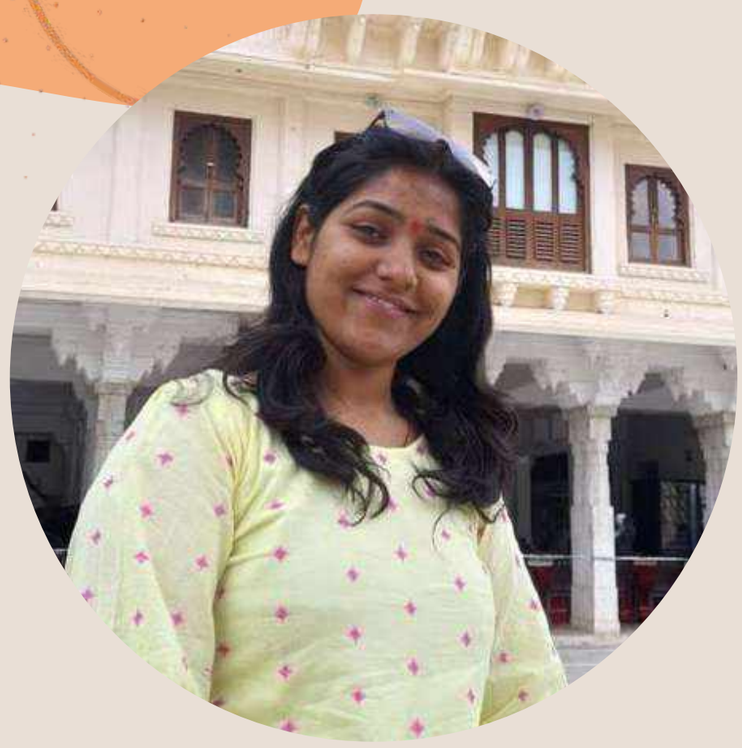
By promoting the cultivation and consumption of these crops, the G20 can help create a more sustainable and resilient agricultural system, while also contributing to human health and well-being.

DISHA (SOCIAL MEDIA TEAM COORDINATOR)

Even though millets might not seem directly related to the G20's main economic agenda, I think that encouraging millet production and consumption has the potential to support sustainable development and economic growth.

AVNEET (SOCIAL MEDIA TEAM CO-COORDINATOR)

With continued investment and support, millets have the potential to contribute to a more sustainable and equitable food system.

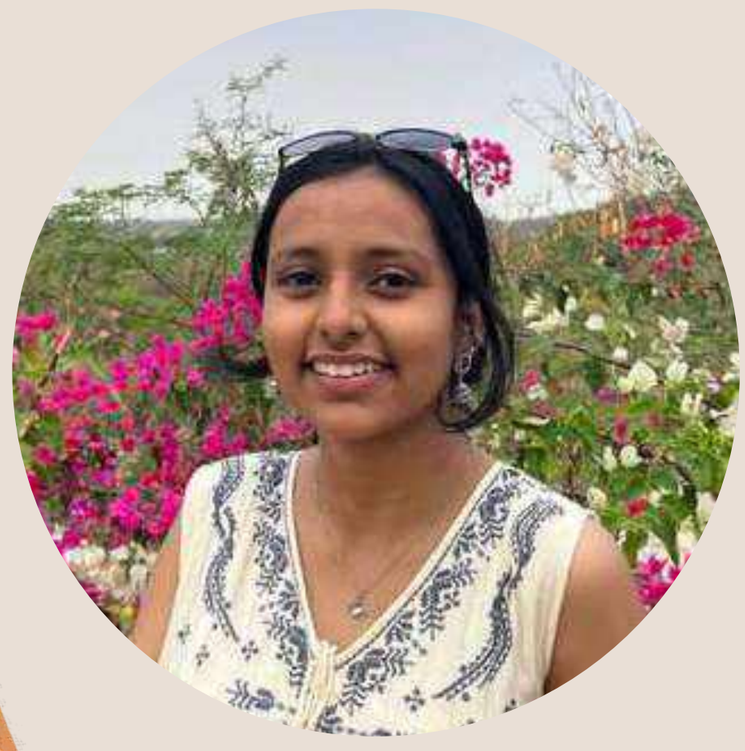


NEERAJ (SOCIAL MEDIA TEAM MEMBER)

Millet is a resilient small-seeded grass that grows well as a rain-fed crop under marginal soil fertility and moisture conditions in dry regions.

ADITY (SOCIAL MEDIA TEAM MEMBER)

Millets have gained popularity in recent years because of their high nutritional content and capacity to flourish in challenging conditions with less water and fertilizer than other crops.

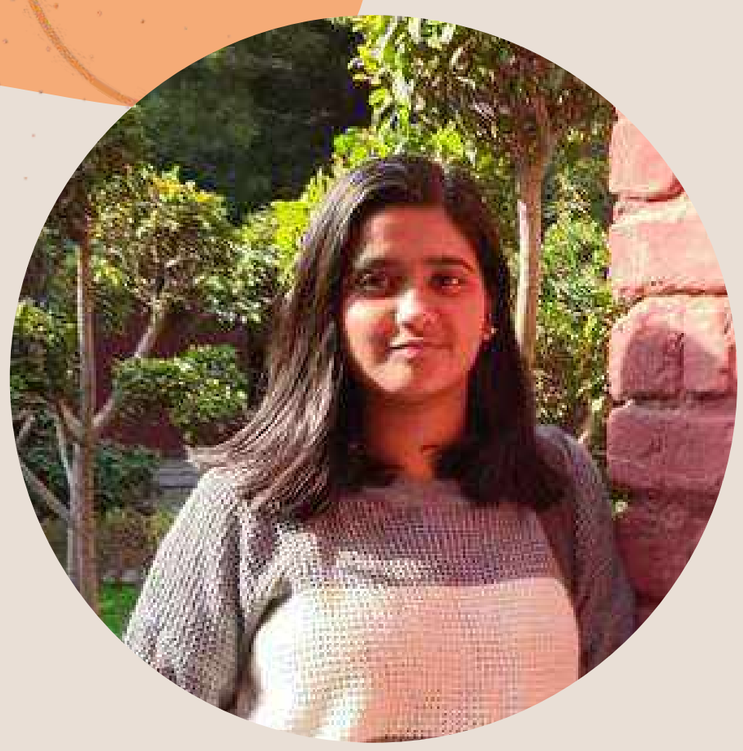


NITYA (TECHNICAL TEAM COORDINATOR)

As the world observes the International Year of Millets 2023, we encourage our readers to explore the various millet-based dishes and snacks that have been an integral part of Indian cuisine for centuries.

NISHA (TECHNICAL TEAM CO-COORDINATOR)

Millets have gained popularity in recent years because of their high nutritional content and capacity to flourish in challenging conditions with less water and fertilizer than other crops.



RICHA (TECHNICAL TEAM MEMBER)

The aim is to improve awareness and consumption through such international events and encourage the dignitaries of visiting nations to include millets in their diet.

VARSHA (MAGAZINE TEAM COORDINATOR)

We encourage our readers to explore the various millet-based dishes and snacks that have been an integral part of Indian cuisine for centuries.

RAJASHWI (MAGAZINE TEAM CO-COORDINATOR)

Think about it: If there is a health food section in the grocery store, what does that make the rest of the food sold there?

ABANTIKA (MAGAZINE TEAM MEMBER)

It's time to embrace the golden crop of India, packed with absolute Nutrition-MILLET

MANSI (MAGAZINE TEAM MEMBER)

Bring a change in your lives. Add a habit. Add Millets!

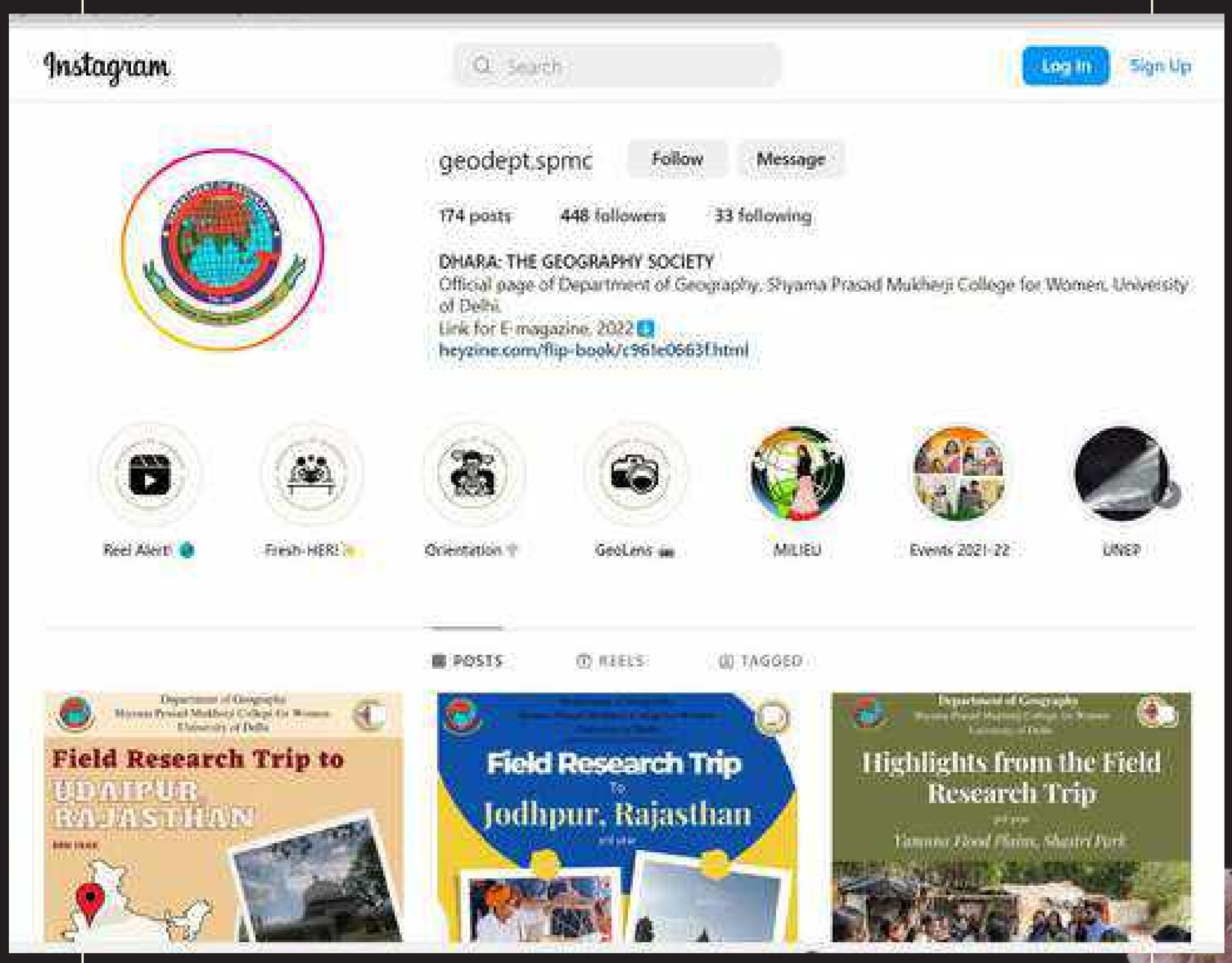
NANDINI (EXTENDED COUNCIL)

"Millets: The secret weapon of health enthusiasts", revive your health with the goodness of millets

RIYA (EXTENDED COUNCIL)

A self-reliant India, working for a global cause, to eliminate hunger: MILLET is undoubtedly a solution.

Are You Following Us On Instagram Yet?



@GEODEPT.SPMC

HERE'S THANKING

Prof. Sadhna Sharma

PRINCIPAL

Dr. Rachna Dua

HEAD OF THE DEPARTMENT

Ms. Anuradha Shankar

Dr. Gargi Kar Majumdar

FACULTY ADVISOR

Mr. Shashank Singh

Dr. Ankur Srivastava

CONVENOR

Dr. Aakash Upadhyay

Ms. Maansi Malik

Md. Arif Hussain

Mr. Prem Prakash

FACULTY MEMBERS

On the behalf of the entire team, we would like to take a moment to wish a very heartfelt

Thank You

Our deepest gratitude and appreciation to all those who helped us fulfill our mission by delivering the message that each of us have a voice and the power to make a difference