

Organic and Natural Farming Systems

**Promoting Non-chemical Agriculture through
Government Programme**

Dr A. K. Yadav

Advisor (Organic)

DA&FW

Organic Agriculture

Definition and Principles

Organic Agriculture is a production system that sustains the health of soils, ecosystems, and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation, and science to benefit the shared environment and promote fair relationships and good quality of life for all involved.

Principles of Organic Farming

Respect to ecology

Health for all

Fairness for all

Care for all

Organic farming does not advocate use of external inputs. It was certification systems that allowed the allowance for use of external organic, biological and mineral inputs as supplementary source to meet the gaps

Natural Farming

Basic Foundation and Pillars

Definition

As per NITI Ayog

Natural Farming is a chemical-free alias traditional farming method. It is considered as agroecology based diversified farming system which integrates crops, trees and livestock with functional biodiversity.

Four Pillars of Natural farming

- Jivamrita & Ghanjivamrita
- Bijamrita
- Mulching and use of botanicals for plant protection
- Wahpsa

Excludes all purchased inputs (organic or chemicals). Inputs to be formed from Desi cow

Organic Vs Natural Farming

Organic and natural Farming

- Both are non-chemical systems of farming
- Based on diversity, on-farm biomass management and biological nutrient recycling
- Diversity, rotation multiple cropping and resource recycling is key

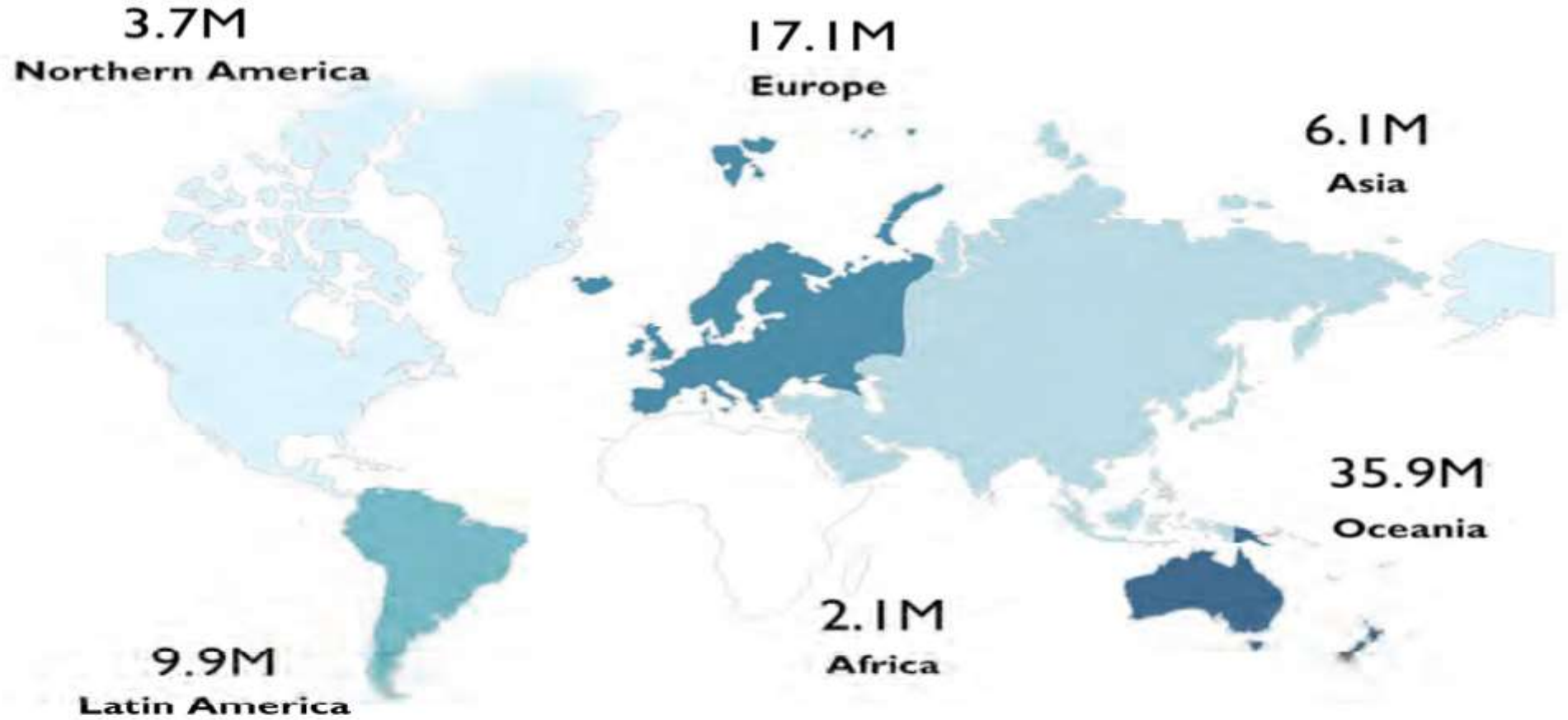
Organic farming

- Open for use of off-farm organic and biological inputs
- Does not allow Genetically modified seeds or products
- Also open for micronutrient correction through use of minerals
- Widely popular, Global market at 132 billion US\$

Natural farming

- No external inputs
- On-farm inputs based on Desi Cow (Jeevamrit, Beejamrit, Ghanajeevamrit)
- Biomass recycling through mulching
- Use of compost/ vermicompost and minerals are not allowed
- Evolving, markets are yet to be developed

The World of Organic Agriculture 2022



Organic agricultural land in hectares (M=millions)

The World of Organic Agriculture (2021)

190 countries
74.9 million Ha farm area (1.6%)
30.0 million Ha wild harvest
3.1 million producers

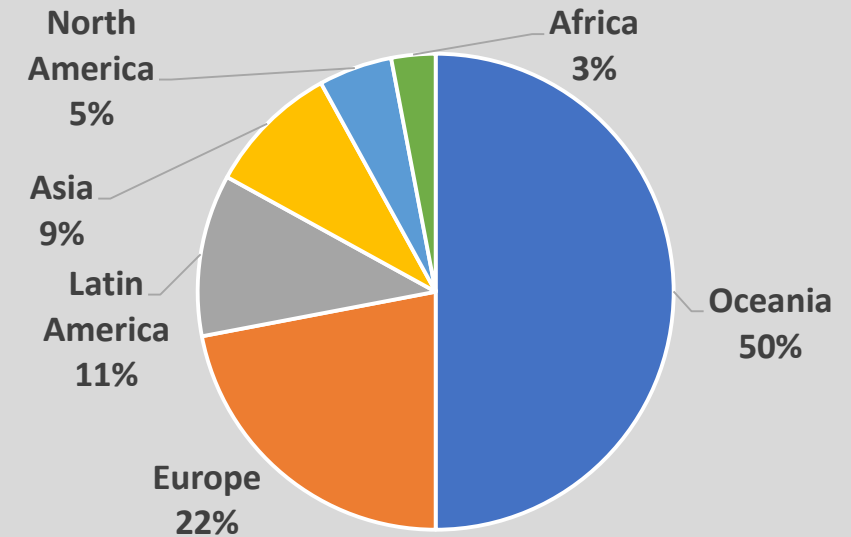
Largest countries

- 35.7 m Ha Australia
- 4.5 m Ha Argentina
- 2.7 m Ha Uruguay
- 2.6 m Ha India

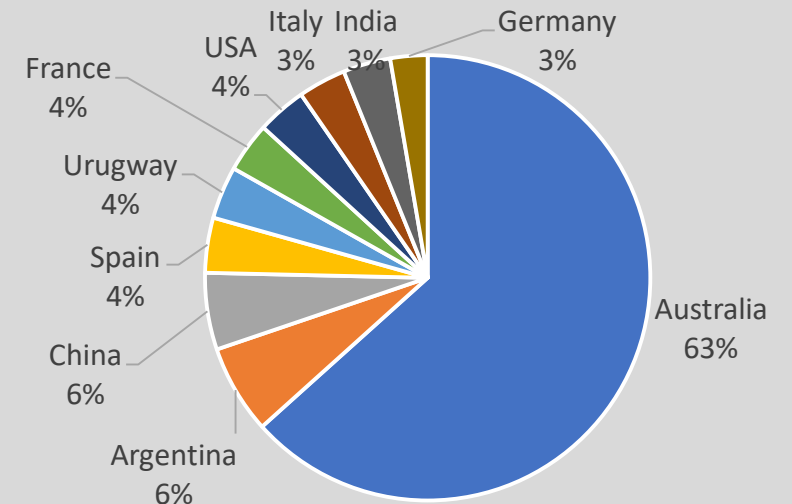
120 billion Euros (US\$ 132 billion) Global market

- 41 % USA
- 37% EU
- 8.5% China

Share of Continents in area %



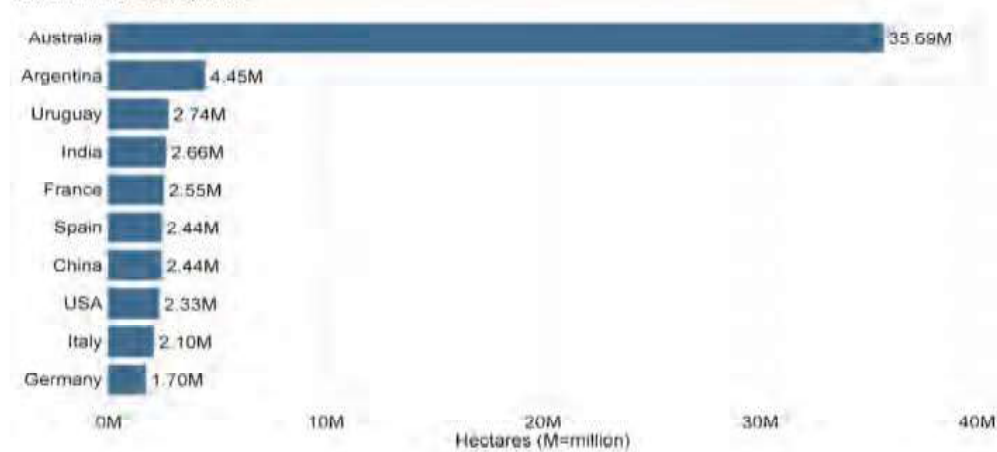
10 largest countries in area (% share)



General Statistics

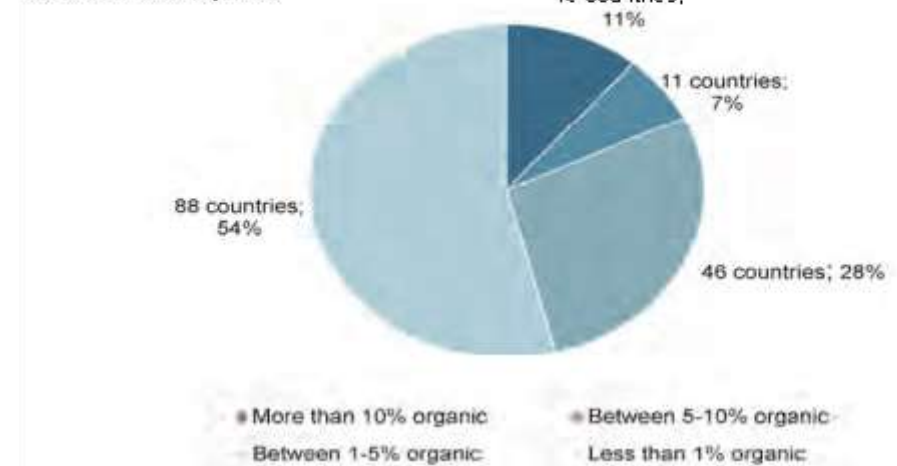
World: The ten countries with the largest areas of organic agricultural land 2020

Source: FiBL survey 2022



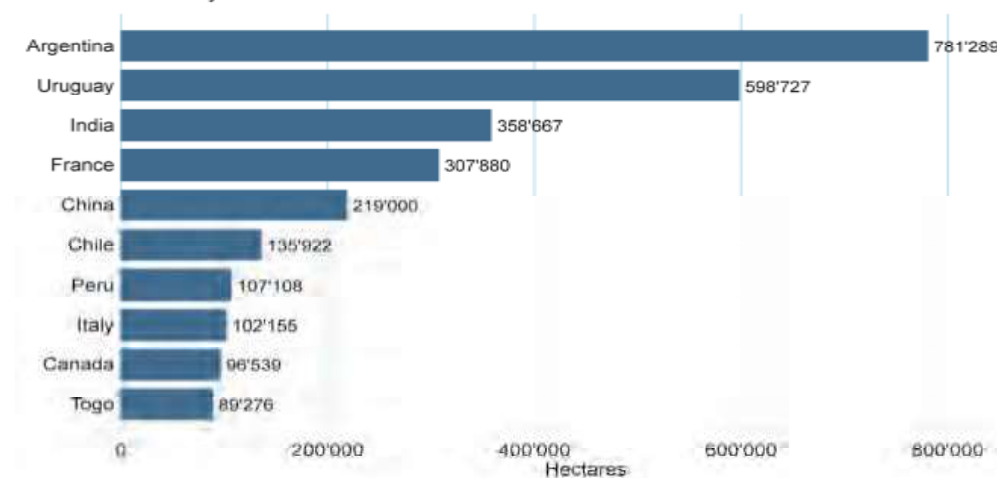
Distribution of the organic shares of the agricultural land 2020

Source: FiBL survey 2022



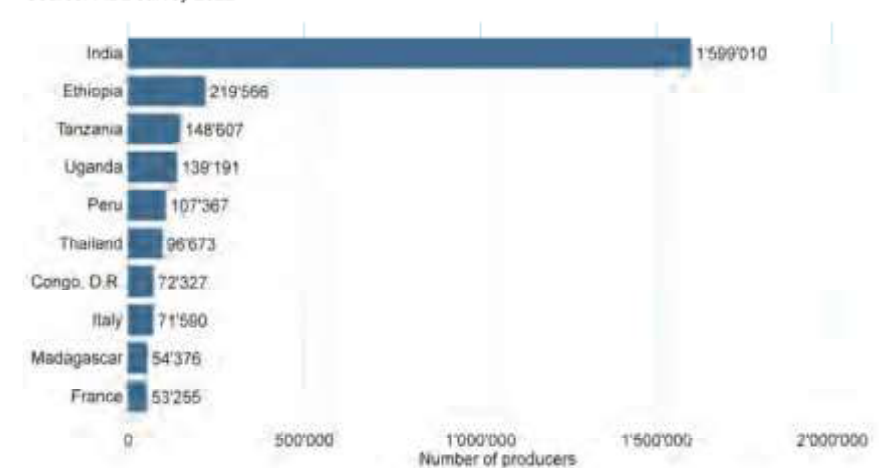
World: The ten countries with the highest increase of organic agricultural land 2020

Source: FiBL survey 2022



World: The ten countries with the most organic producers 2020

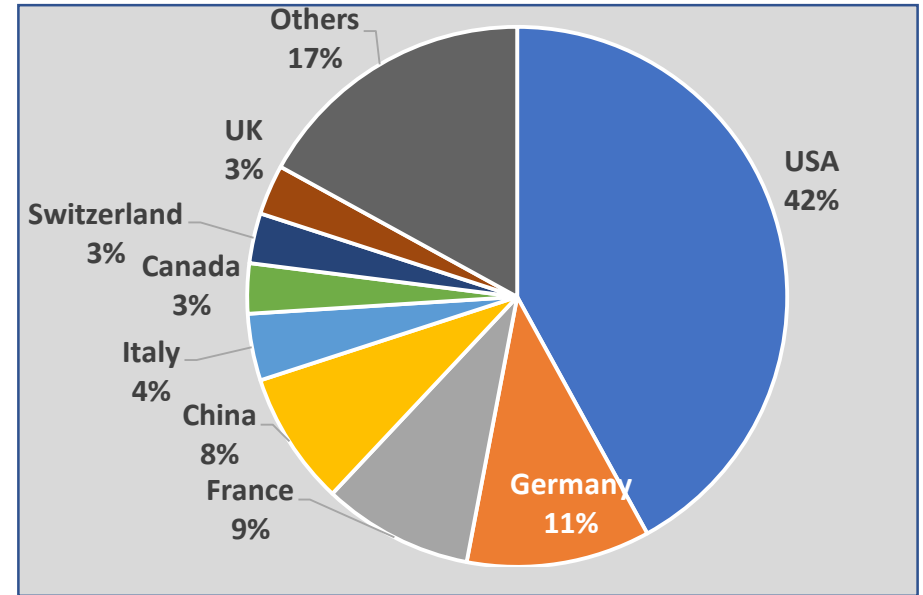
Source: FiBL survey 2022



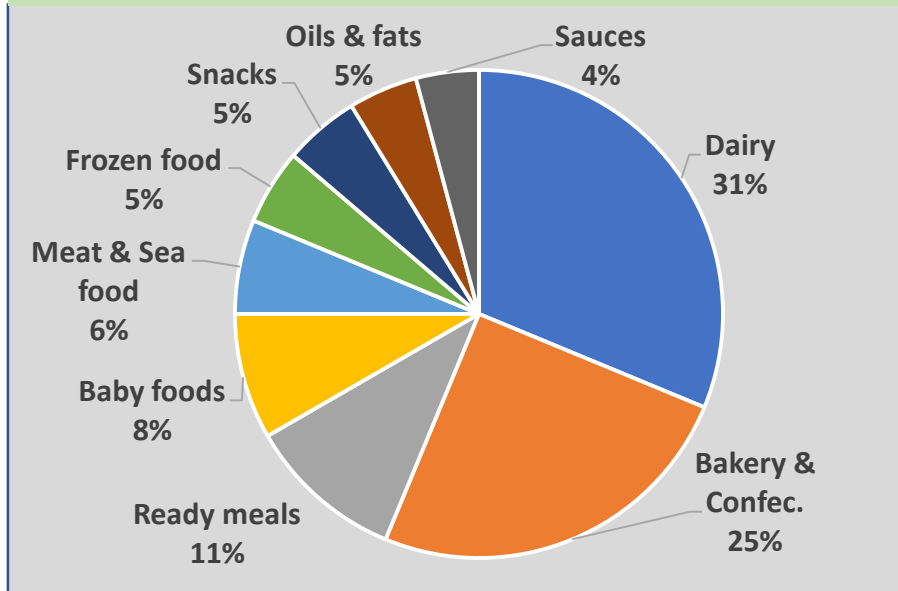
Global Market (US\$ 132 billion) (2020 base year)

Bulk food items in loose	50-60%
Packaged & beverage	40-50% (US\$ 55 billion)
Packaged food	US\$ 32-34 billion
Packed beverages	US\$ 6 – 8 billion

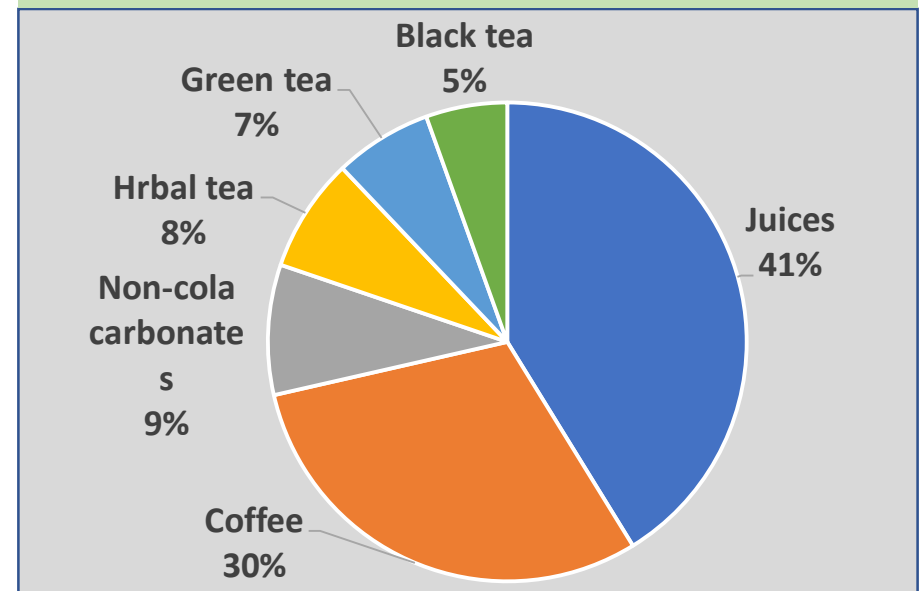
Share in total retail sales (%)



Processed foods



Beverages



Organic Agriculture in India

(Under certification process – NPOP + PGS)

Vision Organic Farming Policy 2005

10% of cultivable land

14 million-advocated

2.8 m Ha – present
coverage (around 2%)

Target by 2025
2.5 million Ha
additional

Area

Total Area	50.08 lakh Ha
Cultivated	38.08 lakh Ha (26.57 NPOP +11.51 PGS)
Wild harvest	12.00 lakh Ha

Production

Under NPOP	32.00 lakh tons
Under PGS	8.20 lakh tons

Farmers

NPOP farmers	13.25 lakh
PGS farmers	15.47 lakh

Global Ranking (only NPOP area and farmers)

4 th in terms of total area
1 st in terms of total producers (farmers)



Jaivik Bharat



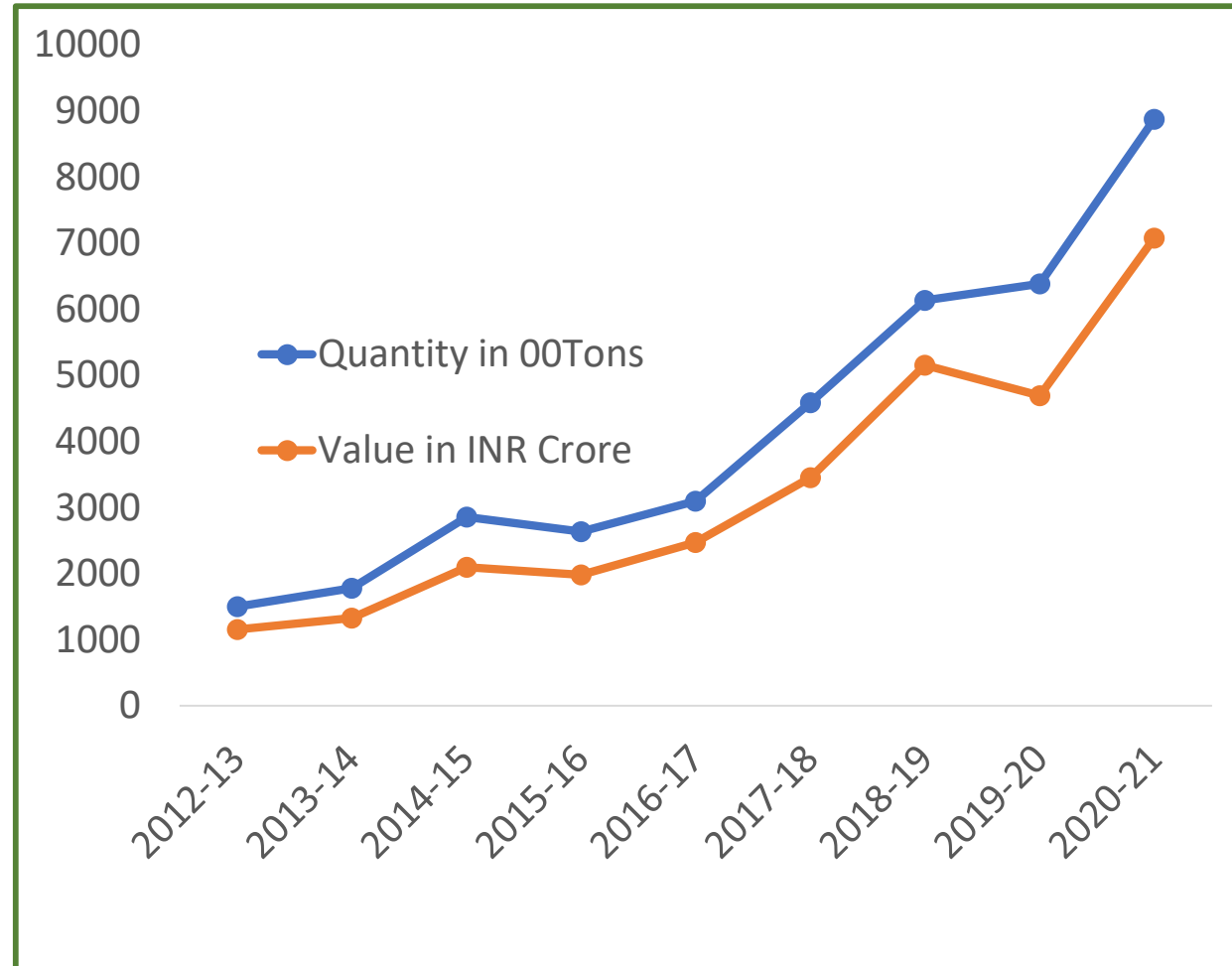
Current Market Status (India as whole)



- Total market size 11500 crore
- Export share 7050 crore
- Organized market 2650 crore
- Farmers markets 1800 crore

- **Growth rate exports 23.35% (CAGR)**
 - 2016-17 25%
 - 2017-18 39%
 - 2018-19 49%
 - 2019-20 04%
 - 2020-21 51%
- **Growth domestic market 20-28% (CAGR)**

Growth in Exports



Export Statistics

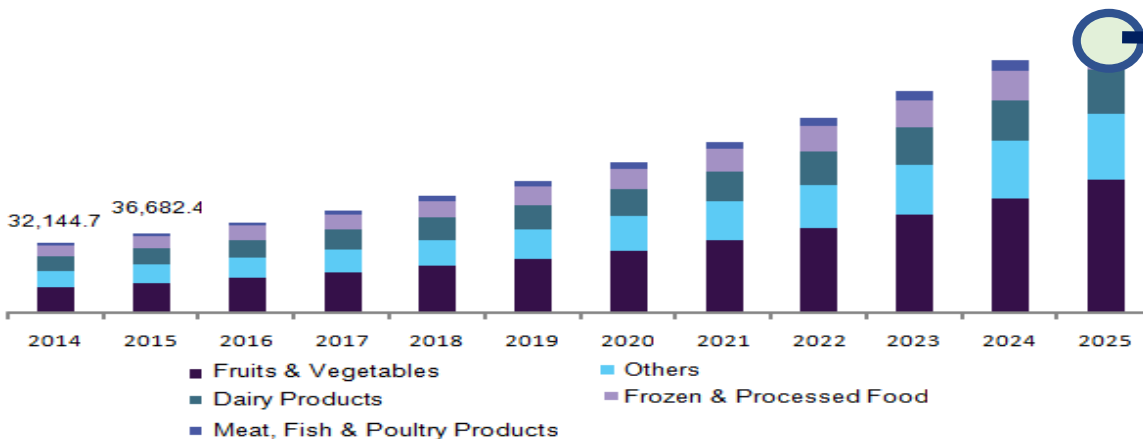
(Source – APEDA)

Year	Exported quantity in MT	Value in INR (crore)	Value in US\$ (million)	Growth in % over previous year (INR basis)
2014-15	285663	2099	327	19.2%
2015-16	263687	1976	298	-8.8%
2016-17	309767	2478	370	25%
2017-18	458339	3453	515	39%
2018-19	614090	5151	757.5	49%
2019-20	638998	4686	689	-9.02%
2020-21	888179	7078	1040	51%

Category Wise Export 2020-21 (in MT)	
Processed Food	655986
Oil Seeds	84073
Cereals & Millets	59908
sugar	40542
Spices & Condiments	10022
Pulses	8782
Fodder	6877
Tea	6164
Coffee	4382
Medicinal Plant Products	4231
Dry Fruits	3658
Fresh Fruits & Vegetables	1404
Tuber Products	1043
Others	656
Essential oil	219
Flowers	190
Miscellaneous	42
Oils & Oleoresins	1
Total	888180

Growth Potential in Exports

Area Coverage	Market	Production	World Trade Trend
<ul style="list-style-type: none"> • Total – 50 lakh Ha • Farm – 38 lakh Ha • Wild – 12 lakh Ha • Global Rank - 4 	<ul style="list-style-type: none"> • 11,400 crore • Export 7,050 crore • Domestic – 4500 crore • Share in world trade 1% 	<ul style="list-style-type: none"> • 40 lakh tons • Oil seeds • Cereals & Pulses • Cotton, Sugarcane • Spices, Tea, Coffee 	<ul style="list-style-type: none"> • Fresh fruits & Vegetables (40%) • Dairy products (20%) • Meat fish & Poultry (15%) • Others (15%) • Processed & frozen (10%)
<p>Target 2030 140 lakh Ha</p>	<p>Target 2030 2.5% (US\$ 2.5 b)</p>	<p>Target 2030 Value added</p>	<p>Target 2030 To diversify into all sectors</p>



India is competing in this 15% sector

Need to Concentrate in

- Fresh fruits & Vegetables
- Dairy (A2 milk & Ghee)
- Processed food & Poultry

Organic Farming Schemes of DAC&FW



Objectives

Organic farming Schemes



Paramparagat Krishi Vikas Yojana (PKVY)

**Cluster based
PGS certification
Domestic markets**

Mission Organic Value Chain Development in North East Region (MOVCDNER)

**FPOs/FPC
3rd party certification
Export
End to end components-**



RKVY, MIDH

Chemical free sustainable farming

Eco friendly & low cost technologies

Market for organic produce

Coverage under Schemes

PKVY

- 11.5 lakh ha area covered
- 15 lakh Farmers covered
- Major crops- cereals, millets, pulses . Veggies
- State wise brands Development

MOVCDNER

- 1.53 lakh ha area covered.
- 170 FPOs/FPCs
- 1,50,000 farmers covered
- Major Crops: Turmeric, Ginger, Pineapple, Paddy, Large Cardamom, Chilies
- Sikkim – Organic State
- State-wise Brand Development

Organic farming- Other related programmes

Namame Gange

- MoU with NMCG
- U.P, Uttarakhand, Bihar, Jharkhand, W.B
- Covered 123000 ha
- 21integrated project
- Brand development
- Market promotion

Bharatiya Prakritik Krishi Padhati/ZBNF

- Chemical free, use of natural on farm products
- Jeevamrut. Beejamrut. Plant extracts etc.
- More focus on capacity building
- Local marketing – residue free food
- 4.09 lakh ha area sanctioned

Certification of contiguous areas

- Certification assistance for individual farmers
- Certification assistance for contiguous areas- ladakh, islands, tribal areas etc.
- Village level Marketing
- 24,500 h area covered in Lakshadweep, Car Nicobar andLadakh

Farmers empowerment through Institutional Development

Under PKVY

- 130 FPOs under 10,000 FPO scheme
- 1 federation and 15 FPCs in Maharashtra by state
- 10 FPC in Karnataka by state
- 10 FPCs in UP by state and UP-DASP
- Local brands developed
- Local and organized marketing channels

Under MOVCDNER

- 170 FPOs
- Six state brands
- Industry and exporter connect
- Buy-back agreements
- Many FPO having
 - Custom hiring centre
 - Collection & aggregation centre
 - Transport vehicle
 - Minimal processing unit

Regulatory Scenario and Certification Systems

Regulatory Scenario for import and domestic market

FSS Act 2006 shall regulate the organic food.

Draft rules says:

No person shall manufacture, pack, sell, offer for sale, market or otherwise distribute or import any organic foods unless they comply with the requirements laid down under these regulations.

- **It will be mandatory to obtain FSSAI Organic food license for selling any organic food**
- **License shall be granted only to those products which are certified under NPOP or PGS-India**
- **Non-compliance of any organic food with the provisions shall attract penal provisions**

Exception under FSSAI Rules

However, organic food that is marketed through direct sales by small producer/producer (up to Rs. 12 lakh turnover) organization to the end consumer is exempt from the need of verification of compliance.

FSSAI Rules for Imports

- Any imported food shall also be subject to compliance of these rules
- Organic food imports under bilateral or multilateral agreements on the basis of equivalence of standards between National Programme for Organic Production and the organic standards of the respective exporting countries shall not be required to be re-certified on import to India

Another Exception

- Small traders/ aggregators with an annual turn over of Rs. 50 lakh can sell organic products of exempted category farmers directly to end consumers
- But no processing and trading allowed. Packing can be done but labels should be different from certified ones
- Records of traceability to be maintained and the product must comply to standards

Organic Certification Systems in India

Two certifications systems in India

- **National Programme for Organic Production (NPOP)** under Ministry of Commerce and Industry- Effective since 2001 – Launched mainly to regulate the quality for exports
- **PGS-India programme** under Ministry of Agriculture and Farmers Welfare- A farmer group centric participatory guarantee system



Note 1 :

Although both the systems are based on the same National Standards for Organic Production notified under NPOP but have independent systems of documentation and compliance verification

Note 2 :

**Both systems are parallel to each other. Product certified under one system can not be processed and certified under another one
Both maintain separate identity**

National Program on Organic Production (NPOP)

Launched during 2001

Internationally recognized

- Equivalence with EU and Switzerland
- Equivalence with Canada, Japan, South Korea and Taiwan – Being negotiated

30 Accredited certification bodies

- 11 in public sector
- 19 in Private sector

Applicability

- Domestic market
- Exports

Scope categories

- a. Crop production
- b. Wild harvest collection
- c. Livestock
- d. Apiculture
- e. Aquaculture
- f. Food Processing and Handling
- g. Animal Feed Processing and Handling
- h. Mushroom Production
- i. Sea weeds, Aquatic plants including micro algae and Green House Crop Production
- j. Organic Textiles and Organic Cosmetics

PGS-India at a Glance

Essential features

- A farmer group centric de-centralized certification system
- Based on common national standards
- Launched in 2016 under Ministry of Agriculture
- Provides end to end traceability in public domain

Product categories

- **Crop production and wild harvest**
- **Livestock and apiculture**
- **Food processing and handling**

Types of Operators

- Individual farmers
- Groups
- Stand alone processors and handlers/ traders
- Large traditional/default area certification



Entry of Natural Farming

Hon'ble Prime Minister's call

- There is need to promote natural farming as mass movement;
- Called upon ICAR and KVKs to scientifically experiment and validate
- Called upon farmers to experiment on their field

Budget Announcements

- Chemical-free natural farming will be promoted throughout the country, with a focus on 5 km wide corridors along river Ganga
- States will be encouraged to revise syllabi of agricultural universities to meet the needs of natural, zero budget and organic farming, modern day agriculture, value addition and management

Bhartiya Prakratik Krishi Paddhati (BPKP)

- **DA&FW decided to include promotion of natural farming under its overall mission for promotion of Non-chemical farming with an aim to reduce cost of cultivation and cut down on use of fertilizers. PKVY was open for any non-chemical form**
- **Bhartiya Prakrit Krishi Paddhti (BPKP) was launched as a sub-scheme under PKVY along with the Large area certification targeted to bring default natural farming areas**

Achievements of BPKP

- **BPKP launched under PKVY with a provision of Rs. 12,200/ha mainly for manpower deployment, training and continuous handholding plus Rs. 8800/ha for branding, marketing and value addition**
- **8 states adopted the scheme and 4.09 lakh Ha area sanctioned with an out lay of 498.98 crore and first instalment of Rs. 50 crore was released**
- **Implementation got delayed due to pandemic**
- **Now states have started the implementation and clusters are being developed**
- **Recently Uttar Pradesh has also been sanctioned with about 40,000 Ha area to be implemented in Ganga corridor**

Proactive stand of ICAR on R&D and extension

- Constituted a committee for development of course curriculum for UG and PG courses;
- Directed all KVKs to year mark some area for model demonstration farm on natural farming;
- Directed IIFSR Modipuram the coordinating centre on organic farming research to include research on Natural farming;
- Directed all ICAR research institutes and SAUs to start research work on natural farming

Initiatives by DA&FW

- Identified MANAGE for development as "Centre of Excellence on Natural farming Extension"
- Directed MANAGE to start collecting best practices and course material for creation of pool of champion farmers and natural farming resource persons
- Rs. 1.50 crore already released to MANAGE for awareness creation of all Gram Panchayats through 750 on-line programme. Series already inaugurated by HAM
- DoE gave in-principal approval for launch of National Mission on Natural Farming under RKVY
- Mission Document already prepared and under consultations

National Mission on Natural Farming Approach

Nation-wide capacity building exercise with focus on continuous training and handholding

Transforming farmer to natural practices willingly on the merit of the system

**Target beneficiaries
(farmers)**

More than 15 lakh farmers directly and many more alongside to join the national movement.

Target

- **Programme will be implemented in mission mode with mission headquarter at DA&FW**
- **MANAGE as knowledge repository & centre of excellence on NF**
- **National Centre of Organic Farming as Certification secretariat**
- **60% of KVKs (425 Nos) as model demonstration and training centres**
- **All blocks will be eligible with institutional structure for promotion**
- **More than 20,000 rural youth will get engaged for 4 years.**

Non-Chemical Agriculture

Outcome expectations

- Non-contaminating and resource conserving
- Non-degrading and help restoration of soil health
- Minimum risks and climate resilient
- Biodiversity enhancement and ecosystem supportive
- Safe and healthy food for citizens
- Freedom for farmers from purchased inputs
- Reduction in costs and better value realization
- Increased employment in rural areas and growing entrepreneurship
- Continuously productive and meeting growing needs

Non-Chemical Agriculture

Way Forward

- Increased investment in research and education
- Investments in futuristic breeding needs and compatible seed industry
- Phasing of subsidies on conventional farming inputs
- Incentivization of ecosystem services
- Promotion as mass movement
- Systems to be wide resource and technology based, open for innovation, evolving and adjustable to local needs
- Massive consumer awareness on safe and diversified food for pull factor
- Linking farmers to value addition and direct marketing
- Leveraging technology for innovations, production systems, quality assurance, traceability, market access and delivery solution

An organic and Natural farmer's dream

You become true organic farmer (Sendriya Shetkari) when you:

- Do not look to market for inputs
- Plant protection is no issue on your farm
- Meet your entire family food requirement (85%) from just 1000 sq mt (10 guntha in Marathi).

Dream is not impossible and I have seen it with many farmers

We only need determination and resolve to achieve the goal of organic (non-chemical) farming

Lets start moving



Thank You