



ONLINE RESEARCH OF ORGANIC MARKETS

Prospects for Bhutan

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Disclaimer

This online research report will only give a general and broad idea on the global organic agriculture: the production and the market and does not cover details on the requirements of the importing countries as they vary from country to country. Further details will be needed to pursue commercial organic production targeting specific export market destination.

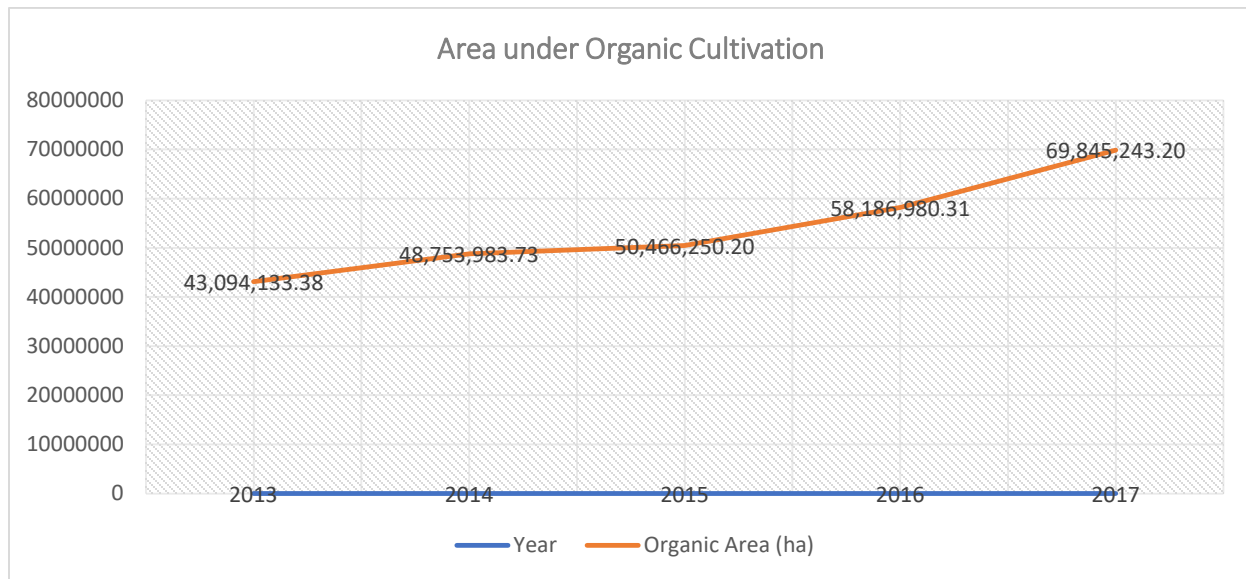
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1. Introduction

According to IFOAM, ‘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 a good quality of life for all involved’.

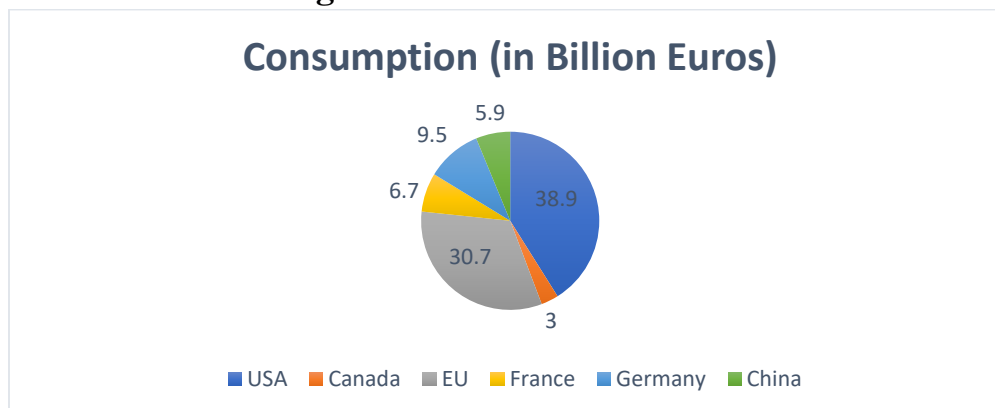
Glance of Global Organic Agriculture



Source: FiBL Statistics

The global organic agriculture has been growing over the years. As of 2017, almost 70 million hectares of land was under organic farming, which is an increase of about 20% from 2016. Going by the trend, it is only expected that the area under organic agriculture is most likely to increase over the years.

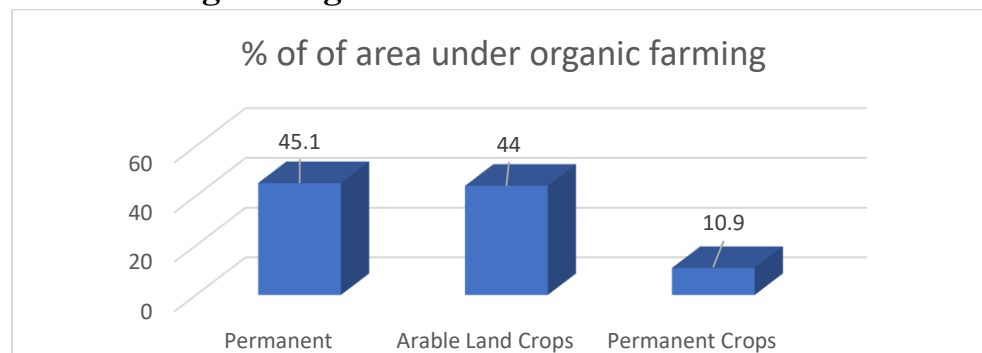
2. Global Organic Food Market



Source: <http://www.europarl.europa.eu>

The global market for organic food is growing and as of 2016, it accounted for more than 94 billion euros. The United States of America is by far the highest consumer of organic food followed by the EU.

3. Organic Agriculture in the EU



In the EU alone, the sales of organic produce/products increased from 20.8 billion euros in 2012 to 30.7 billion euros in 2016. Similarly, the organic farmland increased from 10,047,896 hectares (2012) to 11,931,589 hectares (2016) registering a growth of 18.7%. Over these years, there is an increase in both the sales and the area under organic farming in Europe. However, the total area under organic farming is only 7% of the total agricultural area and the demand gap is met through the imports. Under the permanent area under organic farming includes pastures & meadows mostly used for grazing of organic livestock. Similarly, under arable land crops, mainly the cereals, fresh vegetables, green fodder and industrial crops are included while permanent crops include fruit trees & berries, olive groves and vineyards.

3.1. Import of Organics into EU

In 2018, the EU imported 3.3 million tons of organic agri-produce as per the details mentioned below:

Products	Volume (tons)	%
Tropical Fruit (fresh & dried), nuts and spices	793,579	24.4
Oil Cakes	352,034	10.8
Cereals (other than wheat & rice)	255,764	7.8
Wheat	243,797	7.5
Rice	216,017	6.6
Oilseeds (other than soya-beans)	192,927	5.9
Beet and cane sugar	166,328	5.1
Vegetables (fresh, chilled & dried)	148,108	4.5
Fruits (fresh or dried) excl. citrus and tropical fruits	147,114	4.5
Others	742,837	22.8

By product category, the import of tropical fruit (fresh & dried), nuts and spices are the largest item representing 24.4% of the total import.

3.2. EU rules for production

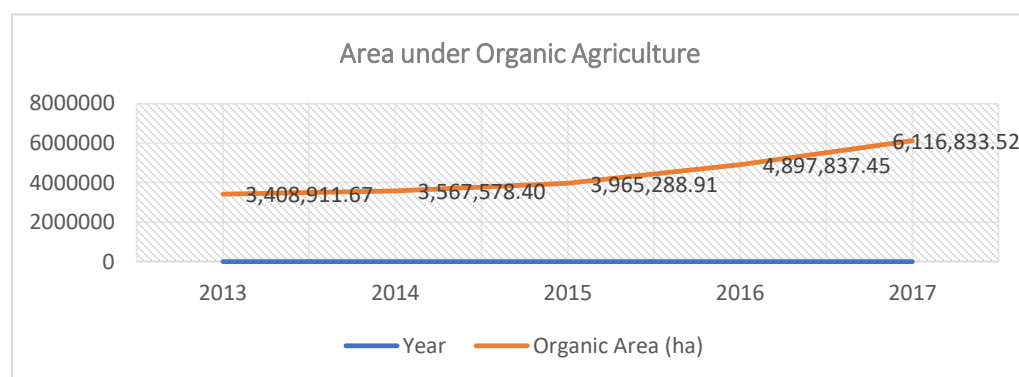
The EU regulation on organic production and labelling of organic products ensures that the same high-quality standards are respected all over the EU. The rules refer to agriculture and aquaculture farming practices, food processing and labelling, and certification procedures for farmers as well as the import of non-EU organic products. The EU's organic logo on food products guarantees that EU rules on organic production have been respected. It is compulsory for pre-packaged food. In the case of processed food, it means that at least 95% of the ingredients of agricultural origin are organic. Super markets and other retailers can label their products with the term 'organic', only if they comply with the rules.

3.3. Rules on Import into EU

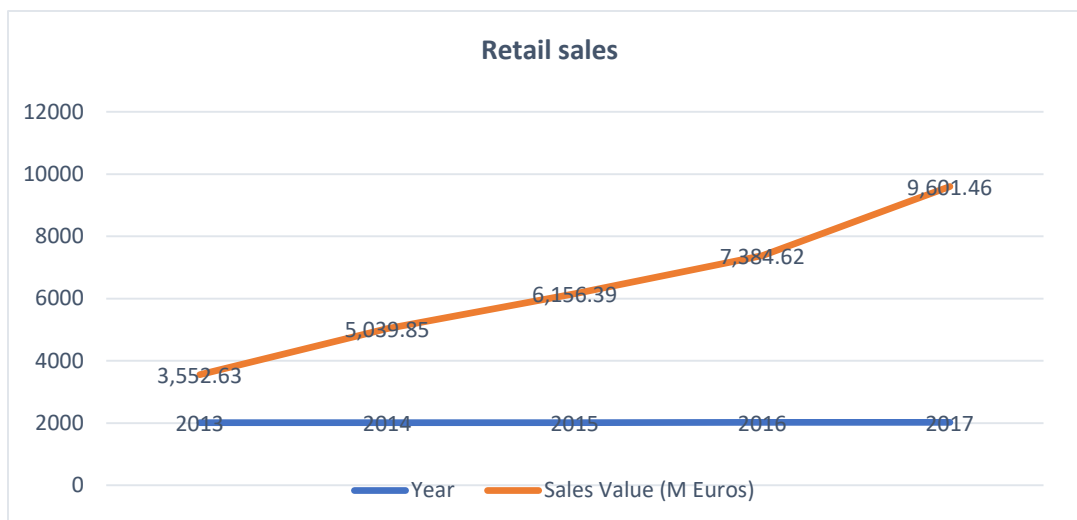
The EU sources its imports from as many as 115 countries, with China as the largest export accounting for 12.7% of the market share in the EU. The EU imports organic products from the third countries under two different regimes: (1) equivalent third countries (covering US, Canada, South Korea, India, Argentina, Australia, New Zealand, Costa Rica, Chile, Israel, Switzerland and Tunisia), which has production and control system recognized as equivalent by the EU (for certain product category) and (2) control body system- private bodies that are authorized by the EU to operate in the third countries and certify operators for the purpose of exports. As per the available record, Bhutan has not registered any formal exports to the EU as of date.

4. Organic Agriculture in Asia

Asia as a region accounts for 9% of the total world organic agriculture land under cultivation, which is 6.1 million hectares as of 2017. The leading countries in terms of agriculture land under organic production are China (3 million hectares) followed by India (1.8 million hectares). In Asia too, the organic agriculture is increasing both in terms of the area under organic farming and the value of the organic retail sales.



Source: FiBL Statistics



Source: FiBL Statistics

4.1. Top Asian Countries in Organics

China

The country with the largest area dedicated to organic farming in Asia is China. The area covered by organic farms is 1.9 million hectares of land. After the US, France and Germany, China is the 4th largest consumer of organic food. Until recent years, the practice of conventional farming was prevalent leading to concerns regarding food safety. The concerns came due to the over-utilization of fertilizers and harmful chemicals. Presently, there has been a shift from conventional to organic farming.

India

Approximately 500,000 hectares of land in India is used for organic farming. One of the reasons for the increased organic farming is the increased world population. Other factors include consumers becoming more conscious of their health and the campaigns to promote sustainable agricultural production. Due to these factors, India has many successful organic farms such as The Farm, Back2Basics, Happy Hens Farms, ABC Farms, and Vridavan Farms among others.

Kazakhstan

Kazakhstan enjoys a substantial amount of government support in organic farming. The country has about 291,203 hectares of land used for organic farming. There are two ministries in charge of the organic agriculture: namely the Ministry for Investment and Development and Ministry of Agriculture. Through these ministries, organic farming has received increased government funding. Organic farming in Kazakhstan is becoming increasingly popular due to the growing demand for organic products, availability of large tracts of agricultural land, and comparative advantage such as low labor costs. Organic farmers engage in both horticulture and cattle farming some of which are exported. As of 2015, Kazakhstan's market for organic products was valued at US\$500 million.

4.2. Challenges of Organic Farming in Asia

A major challenge in organic farming in Asia relates to legislation. For instance, most nations lack a local organic certification procedure. The other challenge is the confusion that ensues between foods labeled “natural” and those that are labeled “organic.” With time, countries will most certainly develop these legislations and apply them to organic farming to encourage organic farming in Asia.

4.3. Major organic markets in Asia

Various research studies show that organic foods have a higher nutrient density than conventional foods. The global organic food and drink market is growing by about eight to ten percent per annum. In particular, growth in the Asian market is occurring at a slightly faster rate, at about 15 percent per annum and the largest market in Asia is in China, which has been showing a spike in demand for organic products for the last 10-15 years. While other important markets for organic products are in Japan, South Korea, India and Taiwan.

A major driver of growth in Asia can be attributed to consumers’ fears for food safety. Additionally, factors such as increasing retail distribution, rising consumer awareness of organic production methods, large companies entering the organic sector and government support have also contributed to market growth. Asian consumers are becoming more aware of organic production methods and how they differ from conventional products. Concerns about agro-chemicals in food products are also generating demand for organic products and the media is playing an important role in accelerating this trend.

The large food companies are also entering the organic food industry and this has caused the distribution of organic products to increase in conventional grocery channels. In China, India and South Korea, leading food and beverage companies have launched organic products- strongly supported by government incentives. This is because, a growing number of Asian governments are recognising the environmental and economic benefits of organic farming and thus, they are encouraging the conversion towards organic agriculture and organic food production. Most Asian countries have also introduced national standards for organic foods, with labelling and certification schemes.

As the global organic food market continues to expand, it is expected that the number of national and private standards for organic food to grow. This is because standards remain an impediment to global trade of organic products as it is evident that organic crops are grown in 178 countries, only 87 countries have national standards for organic production and a key concern is the lack of harmonization between these national standards, as well as growing number of private standards.

4.4. Rules on import into Asian market

For export of organic produce/products in the Asian markets, there are many standards, procedures and requirements to be adhered:

- *Commercial quality and labelling regulations:* Most popular regulations focus on grade, size, weight, and package labelling. Regarding labelling, required information includes: country of origin, product name, variety and quantity.
- *Food Safety regulations:* Producers need to ensure the quality and safety of the produce and avoid all potential hazards such as risks from contaminated water or from other microbial or chemical contaminants. Producers and exporters must comply with the regulations of their country and the regulations of import countries.
- *Product traceability:* Traceability (product tracing) is an important requirement to help determine the origin of a food to ensure the safety for the consumers.
- *Phytosanitary regulations:* The major importing countries around the world implement pest risk analysis in order to determine the risk level of an imported product. It is necessary to apply for phytosanitary certificates for regulated products such as plants, seeds, fruits and vegetables, and cut flowers.
- *Customs clearance:* Final authorization for product entry depends on the customs regulations in the country of import, which may differ from country to country.

5. Organic Agriculture in Bhutan

Bhutanese agriculture system predominantly uses low external input, making it principally organic. In the 12th plan, the organic program is being pursued as a flagship program focusing on selected commodities and Dzongkhags for both domestic and export markets. A total of 39,666 acres of land is targeted to be bought under organic agriculture under the program. The selected commodities for domestic market are asparagus, beans, cauliflower and chilies, while for the export are buckwheat, quinoa, ginger, cardamom, mushroom, turmeric, lemon grass oil and trout.

Table 1: Estimated Production for Export (as per the National Organic Flagship Program)

S/N	Commodity	Volume (MT)
1	Buckwheat	2,686
2	Quinoa	50
3	Ginger	10,000
4	Cardamom	10,000
5	Mushroom	20
6	Turmeric	1,500
7	Lemon grass oil	15
8	Trout	7

The targeted export markets for the selected commodities are India, Bangladesh, Japan, Singapore, Thailand, USA, the EU (France, Germany and Belgium), UAE and the Middle East. Therefore, in order to make organic agriculture economically viable and sustainable, it is imperative to find markets not only in the aforementioned countries but also beyond. Doing so, we would need a demand market research and intelligence on existing markets, competitors, quality and standards, price, export-import

6. Potential Market for Bhutanese Organic Products

6.1. Buckwheat

According to Food and Agriculture Organization of the United Nations, global buckwheat production reached 2.4 million tons in 2016, showing a nearly 20% increase from 2.0 million tons in 2015. Russia is the major producer of buckwheat worldwide, with 1.2 million tons accounting for 49.8% of the global production followed by China, Ukraine, France and Poland.

Japan is the foremost importer of buckwheat in the world. According to the Ministry of Agriculture, Forestry, and Fisheries of Japan Government, Japan imported 52,000 tons of buckwheat in 2017, in addition to the domestically produced 34,400 tons. The figures each increased by 19% and 10% from the previous year. The main imports are from the United States, China, and Russia.

Soba, one of the most popular dishes in Japan made of purely of buckwheat, accounts for the high amount of Japan's buckwheat import. The popularity of soba continues to sustain buckwheat demand in Japan

Some of the major companies dealing in the import of buckwheat in Japan are Cargill Japan Limited, Daiei Sangyo Kaisha Ltd, Japan Trading Co. Ltd and AGG Enterprise.

Import prices in Japan varied by country of destination; the country with the highest import price was the USA for USD 840 per ton, USD 541 per ton from China and USD 413 per ton from Russia in 2018. Besides Japan, the other greatest potential for buckwheat are France and Lithuania. In addition to the export potential in the aforementioned countries, there are requirements to be fulfilled while exporting to these countries (such as labelling, traceability, SPS certification, customs, etc.), which may differ from country to country.

6.2. Quinoa

As per the literature, there are over 3,000 varieties of quinoa, many of which are still grown and several varieties commercialized. These varieties have diverse nutritional properties, but so far, the awareness in the market of these differences is limited. The key properties for trading purposes are:

- the colour (yellow-white, red or black)
- saponin level (sweet or bitter quinoa)
- growth climate (highland or lowland)

Most varieties are cultivated in the South-American highlands. A larger quinoa type grown on the Bolivian highlands is marketed as Royal Quinoa (*Quinoa Real*). Four different varieties are used to produce Royal Quinoa, which has obtained its own protected designation of origin.

About 97% of the quinoa imported into the European Union (EU) comes from Peru and Bolivia. Although Peru and Bolivia are still the world's main suppliers, many other countries have ventured into quinoa cultivation and export.

The USA leads the list of the top quinoa importers in the world while it also exports quinoa to countries like Canada, Japan and China. As per the research, in 2018, the export price of quinoa from USA to Canada was USD 3,375 per ton, while it was USD 4,154 and USD 4,402 per ton to Japan and China respectively.

In Asia, Japan and China are the major importers with a global share of 0.7% and 0.6% respectively. In 2018, a total of USD 1,805 thousand worth of quinoa was imported by Japan and China imported USD 1708 thousand. The major exporters of quinoa to Japan and China are Peru and Bolivia. Japan imported quinoa for USD 3,003 per ton and China import price was USD 3,304 respectively.

While there is an export potential for Bhutan to export quinoa in the global market, the essentials to be considered while planning export are competition in terms of price, quality, quantity, meeting of standards and requirements of importing countries (customs, certification etc.)

6.3. Ginger

The total global production of ginger is 1,683 thousand tons covering total acreage of 310.43 thousand hectares. China, India, Nepal and Thailand are the major producers of ginger in the world, having production of 396.60 thousand tons, 385.33 thousand tons, 210.79 thousand tons and 172.68 thousand tons respectively.

The USA is the leading importer of ginger in the world followed by Japan. As per the ITC Trademap, USA imported 84,714 tons of ginger and 59,127 tons by Japan. The two countries account for 13.4% and 10.4 % respectively in the world import market of ginger.

USA imports ginger mostly from the China, Peru and Brazil. In 2018 USA imported 62,151 tons of ginger from China, 9,129 tons from Peru and 6,502 tons from Brazil respectively. The import price was USD 1,126 per ton from China, USD 2,362 per ton from Peru and USD 1,417 per ton from Brazil.

Japan mostly imports from the China and Thailand. In 2018, 4,1457 tons of ginger was imported from China and 14,874 tons from Thailand. The import price from the China and Thailand was USD 1,453 per ton and USD 1,140 per ton respectively.

On the export front, China dominates the world market followed by Netherlands in the ginger export. Their share in the global market is 55% and 12.1% respectively. According to the ITC Trademap in the year 2018, China exported 476,775 tons of ginger and Netherlands exported 47,689 tons of ginger in the global market.

The average global ginger export price stood at \$1,336 per ton in 2018, going up by 15% against the previous year. In general, the ginger export price continues to indicate a remarkable expansion. However, the export prices varied noticeably by the country of origin; the country with the highest export price was Peru (\$1,989 per ton), while Thailand (\$1,033 per ton) was amongst the lowest. From 2007 to 2018, the most notable rate of growth in terms of export prices was attained by China, while the other global leaders experienced more modest paces of growth.

From 2007 to 2018, the most notable rate of growth in terms of imports, amongst the main importing countries, was attained by India, while the other global leaders experienced more modest

paces of growth. There were significant differences in the average import prices amongst the major importing countries. In 2018, the country with the highest import price was Germany (\$2,672 per ton), while Bangladesh (\$279 per ton) was amongst the lowest.

In value terms, the U.S (\$125M), Japan (\$107M) and the Netherlands (\$83M) constituted the countries with the highest levels of imports in 2018, with a combined 38% share of global imports. These countries were followed by Pakistan, Germany, the UK, the United Arab Emirates, Malaysia, Saudi Arabia, India, Yemen and Bangladesh.

The global ginger market has multiple players, owing to which the vendor landscape is fragmented and is competitive in nature. The markets with greatest potential for of ginger are United States of America, Pakistan and Netherlands. Pakistan shows the largest absolute difference between potential and actual exports in value terms, leaving room to realize additional exports worth \$76.9 million.

6.4. Cardamom

Cardamom, by virtue of its multipurpose use, has earned a reputation as the Queen of spices. Cardamom rules the global spice trade, both in term of volume and value. In the global trade composition, according to Tridge-Globaltrade Platform, in 2016 the total world production of cardamom was about 121,939 MT. India, Indonesia and Guatemala produce on average, 104,514 MT of cardamom or 85.71% of world cardamom production and export 44,508 or 78.21% of world cardamom export.

The most common species, *Elettaria cardamomum* or small cardamom is by far best in terms of quality and dominates the global market. India is the leading small cardamom producer, producing around 38,000 MT in 2016 followed by Guatemala where the production is around 35,000 MT in the same period.

Top Producing countries of cardamom

Rank	Country	Production Volume ('000 MT)	Production Share in Global Market
1	India	38.00	31.10%
2	Guatemala	35.48	29.00%
3	Indonesia	31.00	25.40%
4	Nepal	6.44	5.30%
5	Laos	3.12	2.60%

The total value of cardamom imported in the world was USD 501,874 thousand in the year 2018. The top importer was Saudi Arabia with 6,198 tons followed by United Arab Emirates, Bangladesh and India with 6,949 tons and 4,382 tons and 4,885 tons respectively. The price of the product deferred with distance and location. Saudi Arabia imported cardamom (4,877 tons) mostly from Guatemala (USD 13,645 per ton) in 2018. India is the second major exporter of cardamom to Saudi Arabia. India supplied 1,099 tons of cardamom for USD 15,591 per ton.

The second major importer is United Arab Emirates who like Saudi Arabia imports cardamom mostly from Guatemala and India. In the year 2018 UAE imported a total of 5,894 tons of cardamom from Guatemala and 1,030 tons from India. India is also in the list of importers of cardamom. In the years 2018, India imported 4,885 tons of cardamom from various countries. India imported a total of 4,321 tons of cardamom from Nepal for USD 8,463 per ton.

The markets with greatest potential for Bhutan's exports of cardamom are Bangladesh, India and Germany. Bangladesh shows the largest absolute difference between potential and actual exports in value terms, leaving room to realize additional exports worth \$5.5 million.

6.5. Mushrooms

The global production has grown steadily increased since 1945 and the Asia-Pacific region leads in the global mushroom market with 82.54%. The fast-growing North American mushroom production accounts for 11.05%. Mushrooms are particularly popular in China, Korea, and Japan. It is estimated that the global mushroom market will be worth 35.4 billion USD by 2023 translating to a composite market growth of 15.31% per year. In addition, the dried mushroom market is expected to grow by 14% per year between 2017 and 2023. The medicinal use of mushrooms is also expected to provide extra stimulus for market growth in the next five years.

China, Italy, the US, and the Netherlands are the top producers of mushroom and truffle. China tops the list of world's largest producer of mushroom and truffles with an annual production of about 5 million tons. With an annual production of over 761,000 tons, Italy is the second largest producer of mushroom and truffles in the world.

The major importers of mushrooms are the UK, US and Germany. In the year 2018, the UK imported a total of 102, 165 tons of mushrooms from Ireland, Poland, Netherlands and others. The prices deferred tremendously from the distance and location of the exporting countries. Poland, Canada and Netherlands are the major exporters of mushroom in the world.

The markets with greatest potential for Bhutan's exports of mushrooms- fresh, chilled or dried are Germany, France and Japan. Germany shows the largest absolute difference between potential and actual exports in value terms, leaving room to realize additional exports worth \$51.8 million.

6.6. Turmeric

The global production of turmeric is around 11 thousand tons per annum. India dominates the world production with 78 % share followed by China (8%), Myanmar (4%) and Nigeria and Bangladesh together contributing to 6% of the global production

India is the largest consumer and exporter of turmeric in the world. Indian turmeric is considered to be the best in the world market because of its high curcumin content accounting for 60 per cent of world exports. Other major producers of turmeric are Bangladesh, Thailand, Pakistan, Taiwan, Myanmar, China and Sri Lanka.

India, Vietnam and Indonesia are the largest exporters of turmeric. With exports, India also imports turmeric from other countries. In 2018, India exported a total of 122,151 tons of turmeric to USA,

Iran, Morocco, Malaysia, Germany etc. USA was the one who paid the highest price for the Indian turmeric at USD 9,588 per ton followed by Germany.

Vietnam was the second largest exporters of turmeric in 2018. It supplied a total of USD 22,843 thousand worth turmeric to India, Pakistan, Japan and USA. Indonesia exported a total of 9,541 tons of turmeric for USD 1,358 per ton to India, USA, Singapore, Malaysia and Sri Lanka.

The markets with greatest potential for export of turmeric are India, United States of America and Iran. India shows the largest absolute difference between potential and actual exports in value terms, leaving room to realize additional exports worth \$32.5 million.

6.7. Lemon Grass Oil

According to the global Lemongrass Oil Market report published by Value Market Research, the market is expected to touch USD 231.4 million by 2025. Latin America and Europe are leading markets importing lemongrass oil while India and China are major producer markets. The market demand of lemongrass oil is increasing its popularity in flavoring Asian cooking too. Lemongrass oil is gaining popularity from health-conscious consumers from Latin America, which is driving market growth in the region.

India is the largest producer of lemon grass and about 80% of the produce is being exported. The essential oil is being traditionally exported to West Europe, U.S.A. and Japan. The annual Indian production ranges between 300-350 tons. Currently, the annual world production of lemongrass oil is around 600 tons. However, another 600 tons of a substitute oil viz., *Litsea cubeba* (rich in citral) is exported by China, which limits the scope for any faster growth in export trade of lemon grass oil. Synthetic citral is also available which competes with this oil and natural citral in market.

As of 2018, the USA imported the highest with a total of 12,095 tons of lemongrass oil followed by France and Germany with 5,133 tons and 3,621 tons respectively. The USA mostly imported from France, China and Bulgaria. The import price for the product was valued USD 53,681 per ton.

The markets with greatest potential for exports of essential oils (including lemongrass oil) are the United States of America, France and Indonesia. The United States of America shows the largest absolute difference between potential and actual exports in value terms, leaving room to realize additional exports worth \$284.6 million.

6.8. Trout

Trout farming was introduced to many countries during the last decade and is practiced considerably in 82 countries all over the world today. The most important rearing factor is the availability of oxygen in the water. Therefore, farming is often carried out in areas close to mountains with summer cold and oxygen rich water.

6.9. Main rainbow trout- producing countries

Country	Rank	Production Volume	Production Share	1year growth in production
Armenia	1	8.58K	38.80%	9.60%
Canada	2	7.06K	32.00%	3.60%
Japan	3	3.10K	14.10%	0.20%
Turkey	4	1.44K	6.50%	15.40%

Source: <https://www.tridge.com/intelligences/trout/production>

According to the Tridge market research report, in the year 2015, the total production of trout in the world was 44.33K metric ton. The leading producer was Armenia with 38.8% share in the trout market followed by Canada with 32 % and Japan 14.1% in the world trout market.

The world's biggest importers of trout are Belarus, US and Poland. In the year 2018 the total import quantity of trout of the major importing countries were 9,547 tons, 5,315 tons and 9,387 tons respectively valued at USD 67,861 thousand, USD 53,595 thousand and USD 48,899 thousand. Belarus mostly imports trout from Norway, Finland, Denmark, UK, Russia and others. The import price of Belarus was USD 7,108 per ton. Like Belarus, US and Poland imported trout from Norway, Denmark and United Kingdom. The prices of the import differed with the distance of the supplying countries.

Norway, Sweden and United Kingdom are the largest exporters of trout in the world. In the year 2018, Norway supplied a total of 30,444 tons with a total value of USD 30,444 thousand and likewise Sweden and United Kingdom supplied a total of 12,153 tons and 4,743 tons with a total export value of USD 74,842 thousand and USD 45,922 respectively. The export price for Norway was USD 7,176 per ton, for United Kingdom USD 6,158 per ton and for Sweden USD 9,682 per ton. The three exporting countries mostly supplied to Poland, United States and China.

Some of the key participating players in the global trout market Mowi ASA, Leroy Seafood Group, Cermaq, Grieg Seafood, Clear Springs Foods, Torre Trout Farms, Sunburst Trout Farms etc.

The markets with greatest potential for World's exports of Trout (frozen) are Japan, Russian Federation and Thailand. Russian Federation shows the largest absolute difference between potential and actual exports in value terms, leaving room to realize additional exports worth \$57.7 million.

7. Major Issues for Export from Bhutan

Bhutan as a small producer faces numerous challenges in terms of market penetration in the global market- such as maintaining sustainability in the global economy, keeping up the organic principles and international harmonization of standards and certification. Inadequacies in regulatory and marketing structures (e.g. labelling) and excessive consumer prices and inconsistent quality and availability is also one of the constraints that Bhutan is facing in exporting organic products. The following information is adapted from Indian point of view which is similar to the context of Bhutan

Aspect	Obstacles	Solutions
Price	Price expectations are too high in relation to quality	The export traders should have realistic prices
Quality	Low consistency of quality	The quality must be consistent. Higher quality standards must be enforced to develop and maintain a good reputation. Post-harvest practices should be improved
Availability	Reliability of exporters	Better understanding of the demands of buyers (small quantities) and supply consistency.
Logistics	Poor logistics for export	The logistics must be better coordinated from the place of dispatch for shipment. Customs process should be enhanced. Enhance the infrastructure availability to guarantee quality upon arrival.
Certification	Recognition of certification by importing countries	National certification accredited to international organizations would enhance the acceptance of organic products.
Export authorities	Time consuming and complicated paper work.	Develop a fast track for export.
Information	Lack of information	More promotion activities on the part of traders, farmers and governmental institutions are necessary such as internet portal to enable easy access to information on organic products.
Customer service	Poor customer service from the traders after sales.	Increase service quality; in particular, client follow-up systems must be implemented. Traders must accomplish what they promise.

8. Organic products of Bhutan in Global Market

The global trends of consumers' preference shifting for natural products have helped the government in its decision to initiate the organic farming program since we have the right production environment, both physical, and socio-cultural.

Technological needs for complementing on and building a strong organic culture will require tremendous effort, will and determination from the producers, the technical group, policy makers, planners and administrative bodies to establish the brand name for organic products from Bhutan. This will entail creating consumers' awareness for our products and working in partnership with our farming community on the value of preserving our pristine environment for unlimited production of organic products from the RNR sector.

In terms of Global Trade, Bhutan also have a big advantage in exporting our products in the world market. The custom tariffs applied for the import of goods in most of the importing countries in the world is 0% for Bhutan. Therefore, Bhutan only need to focus in the regulatory requirements established by the importing countries.

9. Conclusion

One of the essential elements distinguishing organic farming from other forms of sustainable agriculture is the existence of production standards and certification procedures. There are no universal standards for production and handling of organic products. Initially, organic standards were developed by private associations, entitling members to use the respective associations' organic brands and labels when marketing their products.

The International Federation of Organic Agriculture Movements (IFOAM) has established guidelines that have been widely adopted for organic production and processing. These guidelines are commonly considered as "minimum standards", leaving room for more detailed requirements, depending on regional or local situations. As organic agriculture has become more widespread, many developed countries have defined their own organic standards.

Since the early 1990s, EC countries have endorsed a common organic standard which is spelled out in Regulation EEC 2092/91. More recently, Canada, the United States and Japan have adopted organic standards and regulations. The Committee on Food Labelling of the FAO/WHO Codex Alimentarius Commission adopted "Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods" in 1999. Organic standards are usually similar as they derive from IFOAM's guidelines for organic production.

Certain natural inputs which various certification programs determine to be harmful to human health or the environment are prohibited. In addition, certain synthetic inputs are allowed. For example, EEC Regulation 2092/91 allows, when required, the use of specific fertilizers and plant preservatives. All certification programs maintain lists of specific approved synthetic inputs and prohibited natural inputs.

Many certification programs require additional environmental protection measures beyond the above prerequisites. For example, specific measures are generally applied in the areas of soil and water conservation, pollution control or the use of biological control agents.

Producers and exporters wishing to export fruit and vegetables with the organic label will have to obtain organic certification. However, in most countries the certification label is also registered as a trade mark. Producers wishing to enter a specific market for organic products may find it useful to be certified by a certification body with a certification label that is well known in that market.

Bhutan as a producer/exporter of organic agricultural products will have to obtain organic certification. This can be done by the certification bodies of the countries targeted for export, or by other foreign certification bodies or by our own national certification body, which is recognized at least in the importing countries. While targeting for export, some of the basic requirements to be considered are:

Phytosanitary certification

Import requirements depend on both the product and the country of origin. In general, a phytosanitary certificate issued by an exporting country will have to be recognized by the importing country.

Grade and quality standards

Organic exported to the EC, Japan or the United States must meet import requirements relating to size, grade, quality and maturity. A certificate based on an inspection must be issued by the country's relevant authority to indicate compliance with standards.

Pesticide and other contaminants

Most developed countries have established standards for tolerances for pesticides, herbicide and fungicides used in the production and treatment (e.g. fumigation) of agricultural products. These countries have established Maximum Residues Levels.

Import clearance

In general, the customs services of the importing country are responsible for the final approval and authorization for the importing of all products. Customs service's review all documentation for the shipment against requirements and will not release goods from the port of entry until all requirements are met. They are also responsible for the collection of any import duties.

10. References Cited and Websites Accessed

www.statistics.fibl.org/world.html?tx_statisticdata_pi1%5Bcontroller%5D=Element2Item&cHash=ba0aa70d46b2bb18dca4638c75aa654e

www.europarl.europa.eu/news/en/headlines/society/20180404STO00909/the-eu-s-organic-food-market-facts-and-rules-infographic

www.ec.europa.eu/info/sites/info/files/food-farming-fisheries/farming/documents/market-brief-organic-imports-mar2019_en.pdf

www.worldatlas.com/articles/top-asian-countries-for-organic-farming.html

<https://apfoodonline.com/industry/asia-leads-growth-for-organic-food-market/>

www.organic-world.net/yearbook/yearbook-2019/slide-presentations.html

www.apfoodonline.com/industry/asia-leads-growth-for-organic-food-market/

www.fao.org/3/a-ag130e.pdf

www.tridge.com/stories/buckwheat-production-soars-but-prices-stay-stagnant-buckwheat-market-2018

www.quora.com/Who-are-the-main-exporter-of-buckwheat-in-japan

www.menafn.com/1097547836/Global-Buckwheat-Market-20182025Research-Trends-Major-Producers-and-Forecast

www.trademap.org

www.apk-inform.com/en/exclusive/topic/1109701

www.exportpotential.intracen.org

www.cbi.eu/market-information/grains-pulses/quinoa-grains/europe/#

www.macmap.org

www.apeda.in/agriexchange/Market%20Profile/one/GINGER.aspx#:~:targetText=China%2C%20India%2C%20Nepal%20and%20Thailand,the%20largest%20area%20under%20cultivation.

www.agriexchange.apeda.gov.in/Market%20Profile/one/GINGER.aspx

www.globaltrademag.com/global-trade-daily/global-ginger-market-2019-u-s-imports-increases-robustly-turning-the-country-into-the-most-promising-market/

www.cardamomassociation.com/report/cardamom/

www.agritech.tnau.ac.in/banking/PDF/Cardamom.pdf

www.researchandmarkets.com/research/zsckhw/global_mushroom?w=5

www.worldatlas.com/articles/the-world-s-top-producers-of-mushroom-and-truffle.html

www.globenewswire.com/news-release/2017/05/16/985506/0/en/Global-Mushroom-Market-Size-Share-Expected-to-Reach-59-48-Billion-by-2021-Zion-Market-Research.html

www.agritech.tnau.ac.in/banking/PDF/Tumeric.pdf

www.einpresswire.com/article/505278589/global-turmeric-powder-market-2019-top-key-players-sale-trends-demand-segmentation-forecast-to-2025

www.futuremarketinsights.com/reports/lemongrass-oil-market

[www.researchgate.net/publication/331703524_Lemongrass_Oil_Market - Trends and Global Outlook Research Report 2018-2025](http://www.researchgate.net/publication/331703524_Lemongrass_Oil_Market_-_Trends_and_Global_Outlook_Research_Report_2018-2025)

www.nhb.gov.in/report_files/lemongrass/LEMON%20GRASS.htm

www.grandviewresearch.com/industry-analysis/us-essential-oil-market

www.tridge.com/intelligences/trout

www.aquaculturealliance.org/advocate/overview-trout-farming-chile/

www.tridge.com/intelligences/trout/production

www.pdfs.semanticscholar.org/2a93/470ca9e75075a32903693fa79b188e93dd81.pdf

www.extwprlegs1.fao.org/docs/pdf/bhu167577.pdf

www.fao.org/3/y1669e/y1669e04.htm