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DEPARTMENT OF AGRICULTURAL EXTENSION

SEMINAR REPORT

ON

ECO-LABELLING

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ECO- LABELLING

Introduction

Over past few decades, environmental concerns are on rise. With increased human activities and negative externalities such as greenhouse emissions, ozone layer depletion, pollution and other hazardous environmental effects are on rise. Due to such an alarmed situation, the concept of sustainability has become a major topic for discussion among the ecological conscious individuals across the world. Thus, individuals concerned for their health and environment have switched to green practices influencing a change in today's consumption pattern thus leading a significant change in consumerism over time where more and more consumers are shifting their preference from conventional products to green products. This has narrowed down to the emergence of a concept called eco labels.

In the modern developed technology and increasing environmental awareness by consumers, the concept of the eco-label helps the consumers to take decisions about the products which are eco-friendly. It has emerged as one of the effective communication tools to communicate these actions to the consumers. It enables consumer to make safe and healthy purchasing decisions based on the information provided related to environmental characteristics and environmental impacts of eco-labeled products over its life cycle. So, it is now imperative for manufacturers to gain competitive advantage in the marketplace and to differentiate their products from others. Eco labels commonly known as green stickers are placed on environmentally friendly products thus providing as an information tool and a source of credibility of product being a greener one to the consumers. Main aim of eco labels is to promote green consumer behaviour and stimulate purchase of green products.

Concept of Eco labelling

The origins of ecolabelling can be found in the growing global concern for environmental protection on the part of governments, businesses and the general public. Initially, and mostly in developed countries, as commercial enterprises recognised that environmental concerns could be translated into a market advantage for certain products, a number of environmental declarations and claims emerged on and in association with certain products.

These included labels with such claims as

"recyclable",

"eco-friendly",

"low energy", and

"recycled content".

Such labelling of the products attracted consumers who were looking for ways to reduce adverse environmental impacts through their purchasing choices. However, these labels also threatened to confuse consumers. Without guiding standards and investigation by an independent third party, consumers could not be certain that the companies' assertions guaranteed that each labelled product was an environmentally preferable alternative. This concern with credibility and impartiality led to the formation of private and public organisations providing third-party labelling.

Background to Eco-labelling

Integrating environmental protection with sustainable development on a global scale was the theme of the United Nations (UN) `Earth Summit' conference in 1992. Agenda 21 is widely regarded as one of the key achievements of this conference since it sets out detailed guidelines for future national and international action concerning the impact of human activities on the environment. Unsustainable patterns of production and consumption are identified as requiring further attention because existing patterns are considered a major cause of environmental degradation, particularly in industrialized nations. Agenda 21 recommends that national policies are developed to reduce unsustainable consumption and to promote efficient production processes. Environmental labelling is one of the measures proposed to achieve these goals because it is thought to have the potential to harness both consumer awareness about the environment and the growing interest, within some sectors of industry, in producing environmentally sound products.

Eco-labelling has been applied since the late 1970s to help consumers make more environmentally conscious purchases. Initially, the driving force behind the development of eco-labels and their supportive legislation were green-conscious consumers and multinational corporations in Europe seeking to improve their corporate social responsibility and to green their global supply chains that spanned the whole of Asia. Recently, environmentrelated labels targeting Asia-Pacific consumers, including those in developing countries, have been steadily growing in numbers (such as Japan’s Eco Mark, Republic of Korea’s Eco-Labelling Programme, Singapore’s Green Label and Thailand’s Green Label). In promotion of carbon disclosure through labelling, countries such as Japan, Republic of Korea and Thailand have adopted a carbon footprint programme on a trial, voluntary or mandatory basis. Around the world, there are many other third-party labelling systems in place, or being developed, which are "hybrids" of ecolabelling because they have narrower focuses than a normal ecolabelling program. These alternative programs focus on a single

sector (e.g. the forestry industry, the chemical industry, etc.), and/or address only one environmental issue (e.g. air quality, energy conservation, etc.), and/or consider only a single life cycle phase in their applications (e.g. product use, product disposal/recycling, etc.). Of further note, some other "Type I" programs have been designed and implemented to address and recognise more than simply environmental performance aspects.

Objectives of Eco-labelling

Ecolabelling has become a useful tool for governments in encouraging sound environmental practices, and for businesses in identifying and establishing markets (i.e. domestic and sometimes international) for their environmentally preferable products. Many countries now have some form of ecolabelling in place, while others are considering program development. Commitment to clear objectives has been critical to the success of ecolabelling programs around the world. While program officials may express them differently, three core objectives3 are generally established and pursued:

1. **Protecting the environment Environmental conservation and protection** is generally a primary objective. Through ecolabelling programs, governments and/or non-governmental program authorities seek to influence consumer decisions and encourage the production and consumption of environmentally preferable goods and the provision and use of environmentally preferable services. In this regard, ecolabelling serves as a market-based instrument intended to bring about environmental improvement. Specific environmental objectives may include:
    - Encouraging the efficient management of renewable resources to ensure their availability to future generations.
    - Promoting the efficient use of non-renewable resources, including fossil fuels
    - Facilitating the reduction, reuse and recycling of industrial, commercial and consumer waste.
    - Encouraging the protection of ecosystems and species diversity.
    - Encouraging the proper management of chemicals in products.
2. **Encouraging environmentally sound innovation and leadership Ecolabelling programs**, through the awarding and promotion of an ecolabel, offer a market incentive to environmentally innovative and progressive businesses. By offering products that reduce stress on the environment, the businesses can establish or reinforce a market niche and positive corporate image among consumers, thereby realising an advantage (and possibly compelling other businesses to follow suit). Generally, ecolabelling criteria are set to reward only the top environmental performers in a product category. Most programs

gradually and incrementally raise standards to encourage producers and service providers to keep pace with new and emerging performance improvement opportunities and market shifts.

3. **Building consumer awareness of environmental issues Ecolabelling programs** can also serve to heighten consumer awareness of environmental issues and of the implications of their choices. In countries where there is a high degree of consumer awareness, a trusted ecolabel that provides reliable information on the environmental impacts of products in the marketplace may be all that is required to promote the selection of ecolabelled products. In countries where consumers are not as highly motivated by environmental concerns, ecolabelling can be used to promote environmentally beneficial actions.

Need of Eco labelling

- "Going green" has become the most topical and fashionable trend during the last decade.
- Many companies have claimed their ecological responsibility to implement desires of constantly increasing community of green consumers.
- Allows consumers to make informed decisions.
- Highlights benefits of products in comparison to their competitors.
- Used as a tool for sustainable development and marketing.

Importance of Eco-labels

- Promotion of International sustainable consumption and production policies
- Aims to reducing the negative impact of consumption and production on the environment, health, climate and natural resources and encouraging corporate social responsibility and sustainable lifestyles.
- Eco-labels „conducted across borders by a working framework that reconciles various laws, cultures and business practices".
- Eco-label has gained significance in international trade because the General Agreement of Trade and Tariff (GATT), executed by 23 nations (including India) in 1948.

Types of Environmental Performance Labelling

Type I -- a voluntary, multiple-criteria based, third party program that awards a license which authorises the use of environmental labels on products indicating overall environmental preferability of a product within a product category based on life cycle considerations.

Type I labels are third-party certified product environmental labels schemes that provide use of a logo associated with certified products. This type of label is most commonly referred to in the literature as an 'eco-label', although the term used in this paper is broadened to include all product environmental declaration labelling systems. Type II labels are based on the self-declarations of manufacturers, importers, distributors or retailers, while Type III provide quantitative life cycle environmental data in a more extensive report format and they are not considered further here. Beyond ISO, there are Type I-like labels, such as Forest Stewardship Certification, which do not label a variety of product categories, but rather focus on a single product category.

Type II -- informative environmental self-declaration claims. ISO 14021 deals with all environmental claims voluntarily made for products. While self-declared claims are often made on products and/or their packaging, they are not restricted to on-pack claims, but include all environmental claims however they are made, for example, in advertising, on the Internet or in trade reports. ISO 14021:1999 is the International Standard that deals with self-declared claims. It states that the overall goal of environmental labels and declarations is, through the communication of verifiable, accurate information that is not misleading, to encourage the demand for, and supply of, products which cause less stress on the environment, thereby stimulating the potential for market-driven, continual environmental improvement. ISO 14021 does not require that environmental claims should be made. Rather, it addresses the issue that if a claim is made, how can it be made in a way which is meaningful and useful to a consumer.

The objectives of ISO 14021 are stated to be the harmonization of the use of self-declared environmental claims with the following anticipated benefits:

- Accurate and verifiable environmental claims that are not misleading

• Increased potential for market forces to stimulate environmental improvements
• Prevention or minimization of unwarranted claims
• Reduction in marketplace confusion
• Facilitation of international trade
• Increased opportunity for consumers to make more informed choices

Type III -- voluntary programs that provide quantified environmental data of a product, under pre-set categories of parameters set by a qualified third party and based on life cycle assessment, and verified by that or another qualified third party.

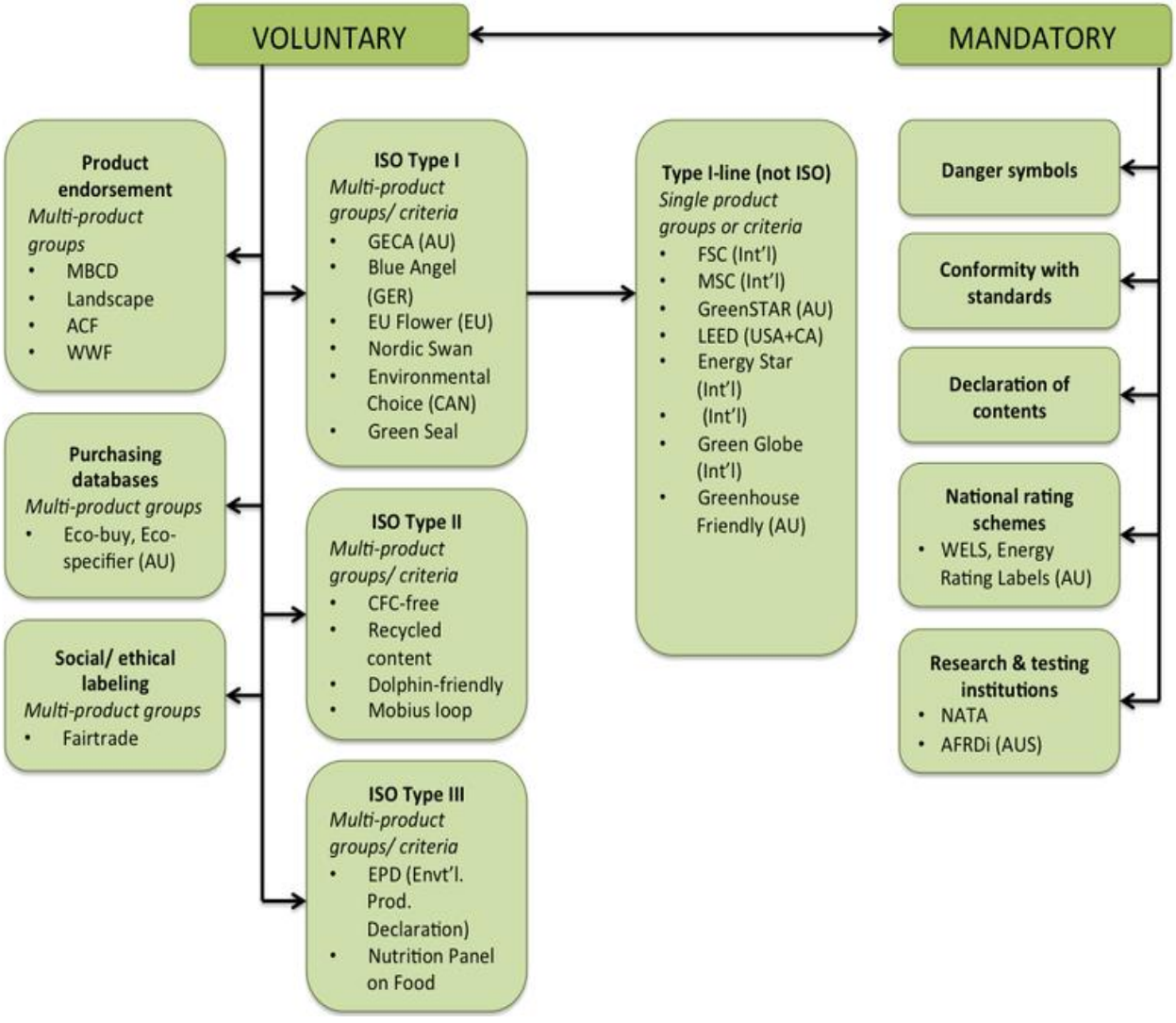


FIGURE:1 Types of Environmental Performance Labelling

Key benefits of Ecolabeling

Ecolabeling program offers a multitude of benefits as detailed below:

Market transformation towards environmentally friendly products: The implementation of an Ecolabeling program encourages the penetration of environmentally-friendly products in the market, and educates consumers about the environmental and economic benefits of purchasing green products. Therefore, it fosters a change in buying Patterns, and gradually rids the markets of inefficient, environmentally-harmful products.

Informing consumer choice: The program will help inform decision making for consumers and may aid the uptake of environmentally-friendly and efficient appliances.

Promoting economic efficiency: The advent and popularization of ecolabeling will help manufacturers and industrial bodies streamline their processes and systems, which in turn, could potentially help cut costs and improve efficiencies. Adhering to the mandates of an ecolabel helps manufacturers integrate environmental responsibility into their processes; therefore, the cost of adhering to governmental regulatory controls is minimized overtime.

Encouraging continuous improvement: All products labeled under an Ecolabeling scheme are required to maintain a high standard of environmental performance, and continuously evolve to comply with new regulations and standards.

Encouraging research and innovation within the sustainability sector: The institution of a comprehensive Ecolabeling program aids research and innovation, which will in turn result in more efficient manufacturing and production processes, sustainable disposal practices, and improved recycling methodologies.

Ensuring sustained environmental performance: Most Ecolabeling programs and schemes have in place a robust monitoring, evaluation, and learning system, which helps maintain the environmental performance of the labeled products.

Energy Independence and Security: Environmentally-compliant facilities reduce dependence on fossil fuels, which increases independence and security and mitigates the prevailing energy crisis.

Ecolabeling as a tool for sustainable economy.

Ecolabels furthers the concept circular economy of resource, as shown in a study by the Global Ecolabeling Network illustrated below. The key parameters of the ecolables are:

- Sustainable raw material extraction
- Environmentally-conscious design
- Integration of efficiency within design and manufacturing
- Ecologically-friendly consumption practices
- Sustainable packaging and distribution

- Environmentally-friendly operations and maintenance activities
- Recycling procedures adopted wherever possible
- Redistribution/reuse of products
- Sustainable disposal

Guiding Principles for Ecolabelling

1. **Voluntary participation**

   The decisions of manufacturers, importers, service providers and other businesses to participate in an ecolabelling program must be voluntary. Programs should also be designed and operated so that potential industry participants (and other interested parties) can request that ecolabelling categories and criteria be developed for their products.

2. **Compliance to environmental and other relevant legislation**

   A key contributor to the credibility of an ecolabelling program is the nature and extent of program participation requirements, both product-specific and more general conditions. While the main focus of the ecolabelling criteria relates to the environmental aspects and performance of a product being offered, it is important to also address the regulatory compliance of a producer's/provider's facility from which the product is being offered.

3. **Consideration of "fitness for purpose" and level of overall performance**

   Besides legislative compliance, it is also important to address the quality and performance of a product that is to be considered for ecolabelling. The credibility of both the ecolabel and the ecolabelling program could suffer if products bearing the ecolabel don't demonstrate comparable quality and reasonable performance in relation to alternatives.

4. **Based on sound scientific and engineering principles**

   Maintenance of stringent technical requirements based on good ecological science assures consumers that they can trust the ecolabel and licensing applicants that they will be treated fairly. Further, there is a strongly prevailing view that product environmental criteria should be based on indicators arising from life cycle considerations.

5. **Criteria must distinguish leadership**

   Criteria should be developed and adopted which clearly distinguish a leadership segment of a product category from the rest of the category. While it can be quite challenging to determine the appropriate "cut-off point", it is essential in order to avoid and/or effectively address potential challenges of arbitrariness and/or irrelevant leadership criteria.

6. Criteria must be credible, relevant, attainable, and measurable/verifiable

Maintenance of stringent technical requirements based on good ecological science assures consumers that they can trust the ecolabel and licensing applicants that they will be treated fairly.

7. Independence

A credible ecolabelling program should be operated by an organisation independent of vested commercial or other interests. Program independence also extends to how product categories and environmental award criteria are determined. Typically, this is done through formal and direct representation of different stakeholders and interested groups on independent boards, panels or advisory groups.

8. Open and accountable process

A credible program must be based on an open and accountable process that can be observed, monitored and questioned at any time. At each process step, fair, consistent and uniformly applied procedures must be established. A good quality management system is a strong asset and highly desirable.

9. Flexibility

In order to be credible and effective, programs must operate in a business-like and cost-effective manner consistent with market forces and requirements. They must be able to respond in a timely way to technological and market changes.

The most common advantages of ecolabels include:

- Stimulation of innovation as more sustainable products are invented
- Development of markets that cater to evolving consumer interests
- Opportunities for education
- Creation of new value chains by establishing new networks of production
- Monitoring of environmental claims
- Influencing consumer behavior towards more environmentally friendly products
- Promotion of economic efficiency in response to predefined standards
- Economic support for sustainability
- Reallocation of the costs of environmental improvement

The most common disadvantages of ecolabels include:

- Potential greenwashing when private, unregulated ecolabels are used
- Consumer/producer disinterest in paying a premium for sustainable products
- Difficulty in proving a positive impact
- Potential redundancy if a number of ecolabels certify the same characteristics
- Prohibitive costs for certification, especially for smaller producers
- Provide a basis for price markups

Challenges

- Finding a balance between the needs and demands of various stakeholders.
- Unawareness of the customer about those seal, sign and symbol.
- The costs to conduct environmental impact and life-cycle assessments drive up production costs.
- Difficult in market penetration.
- Convincing consumer to pay higher prices than conventional goods
- Existence of confusion among buyers due to availability of large number of labels.
- Low government efforts and media coverage.

FIGURE2:Major Participants of Eco-labelling

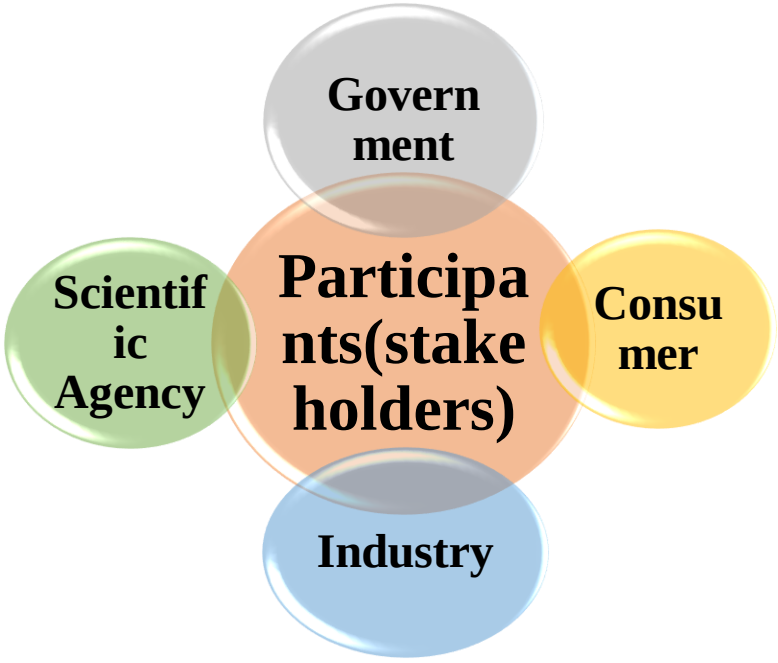
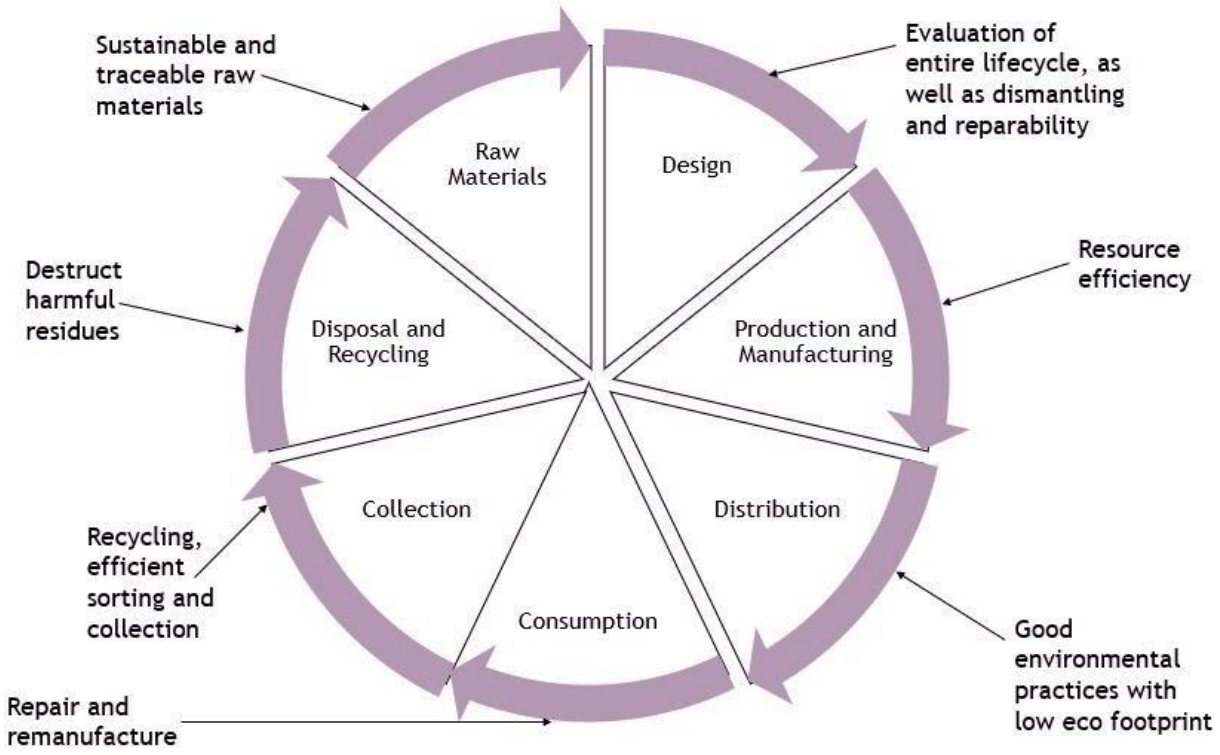


FIGURE 3:Key parameters of Eco-labeling



Key Steps in Eco-labelling

Assuming program management officials have acquired a general knowledge and understanding of environmental priorities to be considered and addressed through their ecolabelling program, program delivery generally involves three basic steps:

1. Selection and determination of product categories

2. Development and adoption of appropriate criteria, standards or guidelines (including development, public review, and finalisation/announcement)

3. Certification and licensing (including: application, testing and verification, and license issuing).

Approaches to Eco labelling in Agriculture

1. Organic farming

The historic basis of 'alternative' farming practices lies in 'organic farming'. This movement had a start in the 1930s, with pioneers such as Albert Howard in the UK (as a developer of composting methods), Rudolf Steiner in Switzerland (as the founder of biodynamic farming) and

Jerome I. Rodale in the US. Organic farming got off the ground as a response to the use of industrial fertilizers, and more so since the 1940s to the use of synthetic pesticides. All forms of organic farming focus on agricultural practice of the farm as a whole.

The aims of organic farming are to enhance biological diversity within the whole system; to increase soil biological activity; to maintain long-term soil fertility; to recycle wastes of plant and animal origin in order to return nutrients to the soil, thus minimizing the use of non-renewable resources; to rely on renewable resources in locally organized agricultural systems; and to promote the healthy use of soil, water and air as well as minimize all forms of pollution thereto that may result from agricultural practices. This is translated into a number of specific requirements, including: no use of industrial fertilizers, no use of synthetic pesticides, no use of feed additives, no use of genetically modified (GM) crops, a none too strict crop rotation, and mechanical weed control.

Table 1 : Organic Products Consumption In India (USD million)

Category	**2017**	**2018**	**2019**	**2020**	**2021**	**CAGR (2017-2021)**
Health & wellness products consumption	6795.6	7779.7	8849.6	9628.5	10458.3	14.2 %
Organic packaged food and beverages consumption	53.5	63.7	75.0	84.8	95.9	18.3 %
Organic packaged food Consumption	9.1	10.7	12.5	13.9	15.3	18.0 %
Organic beverages Consumption	44.4	53.0	62.5	70.9	80.6	18.4 %

Source: Global Organic Trade 2021

Table 2: INDIA: CATEGORY WISE ORGANIC PRODUCTION 2020-21	
Crop Category	**Organic Production (In MT)**
Oil Seeds	853754.86
Fibre	811007.77
Sugar	797627.60
Cereals & Millets	321006.27
Spices and Condiments	104820.81
Pulses	91039.63
Medicinal Plant Products	80533.52
Fresh Fruits and Vegetables	67350.21
Tea	42120.79
Coffee	22401.54
Flowers	13191.48
Dry Fruits	11499.82
Fodder	11059.53
Others	5796.57
On farm Processed Food	4003.86
Tuber products	3134.76
Total Certified production	**3240349.01**

Source:APEDA 2021

2 Integrated agriculture

The second approach concerns 'integrated agriculture', a form of agricultural practice that aims to balance environmental and economic interests. By optimizing between these interests, it is more flexible than organic farming. For instance, the use of synthetic pesticides and industrial fertilizers is minimized, but not totally excluded. Within integrated farming, one can observe a very positive attitude towards high-tech farm practice. Whilst the main driver for organic farming concerns farmer and consumer concerns, the main driver for integrated farming is industry. It can best be described as a searching strategy rather than a set of prescriptions for the agricultural

practice. Present integrated farming can be the common practice of tomorrow. As a consequence there is no overall organization, nor one encompassing global label.

In particular, one can put under this umbrella: integrated pest management (IPM), with the aim to minimize the use of synthetic pesticides (as a balance between often still rather abundant use in conventional agriculture and a strict exclusion as in organic agriculture); integrated crop management (ICM), including both risk prevention by resistant races, and biological pest control; glass houses that aim at a carbon-neutral performance; precision farming, including the use of GPS for the spraying of pesticides, or automatic individual recognition of cattle; conservation agriculture, with a focus on limited use of soil tillage techniques; and recently also developments in sustainable aquaculture based on a people-planet-profit (PPP) paradigm.

The integrated agriculture approach has been taken up by a number of industries and retailers in the form of upstream contracts with their suppliers. Two main European examples can be mentioned. Firstly there is the Sustainable Agricultural Initiative set up by the companies Unilever, Nestlé and Danone. Secondly there is EurepGAP, which is a common standard for farm management practice, created in the 1990s by several European supermarket chains including Sainsbury and Tesco in the UK, Migros in Switzerland, Delhaize in Belgium and Albert Hein in the Netherlands, together with their major suppliers. Recently this standard has achieved a global reach under the name of GLOBALGAP. There are also private labelling schemes that can be put under the heading of integrated agriculture, such as the Utz Certified label for coffee, which sets less strict ecological requirements than organic coffee and less strict social requirements than Fair Trade coffee.

3 Regional products

The third main approach of farming practice concerns regional products. The first main distinguishing characteristic is that the products concerned originate from a well definable region. In addition, many quality aspects can be linked to this. There is a general focus on gastronomy and, in line with this, on the use of traditional techniques and related employment. It has therefore strong links with the so-called Slow Food Movement, originating in Italy but now with a spread over fifty countries. But regional products can also be related to landscape and biodiversity conservation in the given region; in Europe this is, for instance, supported by the ENVIREG programme of the EU.

Consumer perception of regional products is mainly determined by food quality, the locality of production, the vitality of rural areas, small transport distances, freshness, and animal well

being (Roininen et al., 2006). But in fact the concept behind ‘regional products’ and its use in practice is not clear and can lead to confusion. An example concerns the Belgian Flandria quality label for fresh fruit and vegetables, which has been used for ten years for more than fifty fruit and vegetable categories (Verbeke et al., 2008). Buyers of Flandria tomatoes appear to have a stronger belief in the healthiness of tomatoes in general, than of the specific qualities of the certified tomatoes. The highest association both for buyers and non-buyers is with ‘Belgian origin’. ‘Better quality’ and ‘strict production control’ also play a role, but are less dominant.

Scenario of Eco-labelling

International networks

Global Ecolabelling Network

Founded in 1994, the Global Ecolabelling Network (GEN) is an international non-profit network of third party type I ecolabelling organizations focused on encouraging and promoting type I ecolabelling development worldwide. GEN has members represented from more than 50 territories and countries, with a particular focus in Europe and Asia. GEN’s mission is to educate and encourage government, industry, and consumers to recognize the unique and important value of Type I ecolabelling. More specifically, GEN functions to foster cooperation and information exchange across members and ecolabelling programs, facilities access to information on ecolabelling standards, engages with international organizations to promote ecolabelling, and encourages demand for ecolabelling products through the promotion of sustainable public procurement. GEN supports its members in developing environmental leadership standards and criteria.

The stated goal of the Network is to further the exchange of information between national ecolabel organisations that operate "Type I" ecolabels, the strongest category, as defined by ISO 14024. "Blauer Engel" (Blue Angel), the German ecolabel, established in 1978, was the first of this kind. Ecolabels are "licensed" for use only after a product or service is proven to meet transparent, published standards for environmental preferability, verified by a qualified, independent third party, and assessed over multiple environmental parameters. The ecolabels are

an assurance to consumers and procurement professionals that a product or service is proven "green" and has high environmental values and integrity.

The Global Ecolabelling Network, its members, their licensees, and the public celebrates World Ecolabel Day every year in October.

International Social and Environmental Accreditation and Labelling Alliance

Created in 2002, the International Social and Environmental Accreditation and Labelling Alliance (ISEAL) is a body of sustainability standard organizations set up to advance and develop sustainability standards for products across the globe. Its membership is open to all multistakeholder sustainability standards and accreditation bodies that demonstrate their ability to meet the ISEAL Codes of Good Practice and accompanying requirements. Its members are primarily single attribute focused ecolabelling organizations and include the Forest Stewardship Alliance, the Marine Stewardship Council, Fair Trade International, the Rainforest Alliance, and the Alliance for Water Stewardship, among many others.

The goals of the ISEAL Alliance are to improve the impacts of private standards, define credibility for sustainability standards, increase the uptake of credible sustainability standards, and improve the effectiveness of private standards, including driving innovations in standards. ISEAL received criticism from Institute for Multi-Stakeholder Initiative Integrity, with a conclusion that private sector Multi-Stakeholder Initiatives (MSIs) adopt weak or narrow standards that better serve corporate interests than rights holder interests.

Programs by region

Governments of many countries have environmental protection agencies. These agencies are mandated watchdogs of industry and regulate releasing chemical pollution into the environment. Some of them administer labelling standards; other set minimum requirements for manufacturers.

Table 3: ECO LABELLING SCHEMES AROUND WORLD		
COUNTRY	**NAME**	**YEAR**
Germany	Blue angel	1978
Canada	Environmental Choice	1988
Japan	Ecomark	1989
Nordic Countries	White Swan	1989
New Zealand	Environmental Choice	1990
Sweden	Good Environmental Choice	1990
United States	Green Seal	1990
Austria	Austrian Eco Label	1991
India	Ecomark	1991
European Union	European Flower	1992
France	NF-Environment	1992
Singapore	Green Label	1992
Netherland	Stichting Milieukeur	1992
Malaysia	SIRIM Eco-Labelling Mark	2011
Kenya	Eco Mark Africa	2015

Table 3: ECO LABELLING SCHEMES AROUND WORLD

Canada

The Office of Energy Efficiency (OEE) run by the Department of Natural Resources Canada regulates both the automobile and appliance manufacturers. The EnerGuide label for vehicles is found on all new passenger cars, light-duty vans, pickup trucks and special purpose vehicles not exceeding a gross vehicle weight of 3855 kg (8500 lb). The label shows the city and highway fuel consumption ratings and an estimated annual fuel cost for that particular vehicle. Federal law in Canada, under Canada's Energy Efficiency Regulations, requires that the EnerGuide label is placed on all new electrical appliances manufactured in or imported into Canada and that the label indicates the amount of electricity used by that appliance. This information is determined by standardized test procedures. A third-party agency verifies that an appliance meets Canada's minimum energy performance levels.

United States

The Energy Star service mark is placed on energy-efficient products.

All major home appliances must meet the Appliance Standards Program set by the US Department of Energy (DOE) on cooperation with the US Federal Trade Commission. Manufacturers must use standard test procedures developed by DOE to prove the energy use and efficiency of their products. Test results are printed on yellow Energy Guide label, which manufacturers are required to display on many appliances. This label estimates how much energy the appliance uses, compares the energy use of similar products, and lists approximate annual operating costs. Appliances that meet strict energy efficiency criteria set by the U.S. Environmental Protection Agency are eligible for the blue Energy Star label. The Energy Star label is also available on energy-efficient televisions, computers, audio visual equipment and electronics, office equipment, heating and cooling equipment, and many more products. Energy Star is also available on energy efficient homes and buildings in the United States. American automobile manufacturers are required to use certified U.S. Environmental Protection Agency fuel economy test results and cannot use any other fuel mileage results to advertise

vehicle fuel efficiency. The state of California has green sticker license plates issued to OHVs is introducing green stickers for all new automobiles in 2009.

European Union

The EU Ecolabel was established in 1992 by the European Commission. It helps to identify products and services that have a reduced environmental impact throughout their life cycle. Recognized throughout Europe, it is a voluntary label promoting environmental excellence which can be trusted. It is the only pan-European Type I official ecolabel. The EU Ecolabel is awarded according to ecological criteria agreed on by experts, industry, consumer organizations and NGOs and verified by independent third parties. The implementation of the EU Ecolabel is set through the Regulation (EC) No 66/2010 of the European Parliament and of the Council.

Northern Europe

The Nordic swan is the official ecolabel in Nordic countries. It uses a system of standards, applications for licenses, and independent verification. In the Netherlands, the private label EKO is granted to products with at least 95% organic agricultural content.

ASEAN

In Asia ASEAN is moving towards adopting the ISO's TC 207 environmental management system. Anyone can contribute verifiable sources substantiating its adoption and implementation by member countries as this information is not easily accessible.

BLUE ANGEL

The Blue Angel has been the ecolabel of the German Federal Government for more than 40 years. It is an independent and credible label that sets stringent standards for environmentally friendly products and services. The Blue Angel is the guide for purchasing. The Blue Angel is the reliable label for environmentally friendly products and services in many business sectors. Numerous everyday products from various different areas of life carry the label:

e.g. furniture, laundry detergents or paints. More than 20,000 products and services from more than 1,600 companies have now been awarded the Blue Angel.

Scenario of Eco labelling in India

Plate 1: Indian Eco-labels

ECOMARK SCHEME

The Central Pollution Control Board has set up the guidelines for the environmentally friendly products. The products can obtain environmental labelling from the Government of India if they meet the criterion set by the acts in Indian laws- the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Water (Prevention & Control of Pollution) Cess Act, 1977 and the Environment (Protection) Act, 1986.

The EcoMark is awarded to those consumer goods if they meet the relevant standards of the Bureau of Indian Standards and specified environmental criteria. The manufacturers should produce the consent clearance as per the provisions of Indian environmental laws, product packaging, displays environment friendly criteria in brief, and has eco-friendly packaging (reusable or recyclable or biodegradable materials).

ECOMARK SCHEME IN INDIA

❖ Government of India in 1991 launched its first eco-label scheme, known as „Eco-mark“ through the Central

Pollution Control Board (CPCB),

❖ GoI that follows a cradle-to-grave approach.

❖ It advocates pro-active and promotional roles of the

consumers, the industry, and the government at one platform to address environmental protection issues and to implement environmental protection strategy.

❖ The EcoMark Scheme is similar to ecolabeling schemes of other countries.

❖ The products should meet both environmental and quality criteria set by the Bureau of Indian Standards (BIS).

❖ The programme is run by the Ministry of Environment of Forests and Climate Change (MoEF&CC), with the technical advice of the Central Pollution Control Board (CPCB).

OBJECTIVES OFTHE SCHEME

➢To provide an incentive for manufacturers and importers to reduce adverse environmental impact of products.

➢To assist consumers to become environmentally responsible in their daily lives by providing information to take account of environmental factors in their purchase decisions.

➢To encourage citizens to purchase products which have less harmful environmental impacts.

➢Ultimately to improve the quality of the environment and to encourage the sustainable management of resources.

CRITERIA

➢The criteria are based on the cradle-to-grave approach, i.e. from raw material extraction to manufacturing and to disposal. The basic criteria cover broad environmental levels and aspects, but are specific at the product level. A product is examined in terms of the following main environmental impacts :

➢That they have substantially less potential for pollution than other comparable products in production, usage and disposal.

➢That they are recycled, recyclable, made from recycled products or bio- degradable, where comparable products are not;

➢That they make significant contribution to saving non-renewable resources including non-renewable energy sources and natural resources compared with comparable products;

➢That the product must contribute to a reduction of the adverse primary criteria which has the highest environmental impact associated with the use of the product, and which will be specifically set for each of the product categories.

PRODUCT SPECIFIC REQUIREMENTS

➢Production process including source of raw materials;

➢Use of natural resources;

➢Likely impact of the environment;

➢Energy conservation in the production of the product

➢Disposal of the product and its container

➢Utilisation of "Waste" and recycled materials;

➢Suitability for recycling or packaging; and

➢Biodegradability

➢Effect and extent of waste arising from the production process

ECO PARAMETERS

Eco labels are awarded on the basis of compliance of certain eco parameters by the product.

✓ pH ✓ Formaldehyde ✓ Heavy metals (As, Pb, Cd, Cr, Co,	✓ Chlorinated organic carriers ✓ Boicidal finishes ✓ Flame retardent finishes
Cu, Ni, Hg) ✓ Pesticides Chlorinated phenols ✓ Dyestuffs (specific classifications)	✓ Colour fastness ✓ Emission of volatiles ✓ Odours

THE CPCB HAS IDENTIFIED FOLLOWING PRODUCT CATEGORIES

1. Aerosol Propellants
2. Batteries
3. Dry Batteries
4. Cosmetics
5. Electrical/Electronic Goods
6. Fire-extinguisher
7. Food Additives
8. Food Items: Edible Oils, Tea and Coffee
9. Leather
10. Lubricating Oils
11. Packaging Materials
12. Paints and Powder Coatings
13. Paper
14. Plastic Products
15. Soaps & Detergents
16. Textiles
17. Wood Substitutes

DOCUMENTS REQUIRED FOR ECO-MARK

- If the industry is a company then certificate of incorporation.
- Memorandum of Association and Articles of Association.
- Environmental clearance certificate from the concerned State Pollution Control Board.
- Product details and catalogue.
- Details and information obtained from the lab.

- Samples information.
- Separate application for all types of products.

STEERING COMMITTEE

The Government of India has set up a Committee in the Ministry of Environment and Forests and notified on March 6, 1991. The Ministry of Environment and Forests determines the categories of the products for coverage under the scheme and also formulate strategies for promotion by creating mass awareness, implementation, future development and improvement in working of the scheme. This Committee ensures involvement of other ministries, industries, associations, non- governmental organizations and it is responsible for notifying final criteria in the Gazette of India.

TECHNICAL COMMITTEE

The Ministry set up a Technical Committee on March 6, 1991 and subcommittees for each product categories with expert in field for drafting the criteria. The Technical Committee recommends the most suitable criteria and publishes draft final criteria. The Technical sub-Committees consider the comments/ suggestions received on the draft notification, finalize the criteria and recommend to the Steering Committee for final notification. The Committee advises and recommends product categories as well as evolves the detailed criteria for the award of the Eco Mark. The Committee consists of members having specific expertise and representatives of the industry affected, the scientific community, environmentalist consumer groups and government. The product selected and criteria defined are reviewed in the Ministry of Environment and Forests, in the light of comments from various interest groups. The Ministry then notifies the criteria for the various product categories.

EXECUTING AGENCY

The Bureau of Indian Standards has been designated as the executive agency for the scheme. On receipt of application for the award of the Eco Mark, the Bureau of Indian Standards/Directorate of Marketing & Inspection/Directorate of Plant Protection, Quarantine and storage organizes and inspection of the manufacturer's units to make an appraisal of the control exercised during production and the facilities available for carrying out tests on raw materials and on the final product. Only after the certifying agency has satisfied itself that the manufacturer has given a license to affix the Eco Mark on the product. Every license includes a well-defined scheme for testing and Inspection (STI), which the licensee has to follow strictly.

EXAMPLE 1: BIS STANDARDS HAVE BEEN AMENDED INCORPORATING THE ECOMARK REQUIREMENTS :

TEA

I. Product shall be free from adulterants like spent tea leaves, grit, sand, leaves of other plants.

II. Product shall be free from off-odour and shall have its characteristic flavour.

III. Lead content shall not exceed 6.5 ppm.

IV. The product shall be free from any added colouring and no extraneous flavour shall be added, however, for exports this may be allowed as per the provisions of PFA Act, 1954 and rules made there under.

V. Product shall be free from mould growth.

VI. The pesticides residues (if any) shall not exceed the limits as specified in the Prevention of Food Adulteration Act 1954 and Rules made there under.

COFFEE

I. Coffee beans shall be free from infestation due to insect, fungus and rodents.

II. Product shall be free from any extraneous matter like strings, stone, dirt, wood, glass and metallic pieces.

III. Product shall be free from any added colouring, flavouring and also free from rancidity and should have its characteristic flavour.

IV. Product shall be free from adulterants like dandelion and other roots, nerons, fige, date, stones and cereals.

V. The pesticides residues (if any) in the product shall not exceed the limits as prescribed in Prevention of Food Adulteration Act, 1954 and Rules made there under.

1.	IS 2791:1992	Soluble coffee powder
2.	IS 3077:1992	Roasted and ground coffee
3.	IS 3309:1992	Soluble coffee chicory powder
4.	IS 3581:1982	Grading for green coffee
5.	IS 3802:1992	Roasted coffee chicory powder

FEES FOR ECO LABELLING

The following fees are required to be paid to the Bureau of Indian Standards for obtaining the Ecomark :

I. Application fee of Rs.500/= per application, which is non-refundable;

II. Testing charges of the independent laboratories for the samples drawn prior to the grant of licence;

III. Annual license fee at the rate of Rs.500/= per license;

IV. Renewal application fee at the rate of Rs.300/= per application when a license is due for renewal; and

V. Marking fee, depending upon the quantum of the annual production of the licence.

INDIA ORGANIC

➢ Agriculture without the use of chemical fertilizers and pesticides with an environmentally and socially responsible approach.

➢ Grass root level preserving the reproductive and regenerative capacity of the soil, good plant nutrition, and sound soil management, produces nutritious food rich in vitality which has resistance to diseases.

As on 31st March 2021 total area under organic certification process (registered under National Programme for Organic Production) is 4.33 million ha (2020-21).This includes 2.65 million ha. cultivable area and another 1.68 million Hectare for wild harves collection.India produced around 3.49 million MT (2020-21) of certified organic products. Thetotal volume of export during 2020-21 was 8.881 lakh MT. The organic food export realization was around INR 707849.52 lakhs (1040.95 million USD).The typical expenditure on getting Organic Certification for Individual farmers varie within 25,000/- INR to 40,000/- INR, while for farmer groups it varies between 40,000/- INR to 1,00,000/- INR

Table 4 :Time period and expenditure for Organic Certification in India

Type of agricultural unit	Typical time period for organic certification
Farm	24 months
Fruit Orchards	36 months
Dairy unit on certified land	90 days
Food Processing units	1 day
Unused land	Typically takes the same time as a farm or fruit orchard. But if the land happens to be in remote area then the time can be relaxed by 12 months at best.

Forest Stewardship Council certification

Mission : FSC will promote environmentally appropriate, sociallybeneficial, and economically viable management of the world‟s forests.

Vision : The true value of forests is recognized and fully incorporated into society worldwide. FSC is the leading catalyst and defining force for improved forest management and market transformation, shifting the global forest trend toward sustainable use, conservation, restoration, and respect for all.

FSC
www.fsc.org
FSC® C121941
The mark of responsible forestry

SOME KNOWN ECOLABELLES IN INDIA

✓ **Forest Steward council certification**

✓ **Rainforest Alliance certification**

Mission : The Rainforest Alliance is creating a more sustainable world by using social and market forces to protect nature and improve the lives of farmers and forest communities.

Vision : We envision a world where people and nature thrive in harmony.

✓ **Carbon Neutral certification**

✓ **Fair trade certification**

FAIRTRADE

Mission : Our mission is to connect disadvantaged farmers and workers with consumers, promote fairer trading conditions and empower farmers and workers to combat poverty, strengthen their position and take more control over their lives.

✓ **Global organic textile Standards**

Mission : Our mission is the development, implementation, verification, protection and promotion of the Global Organic.

Textile Standard (GOTS)

✓ **Marine Stewardship council**

Mission : Our mission is to use our ecolabel and fishery certification program to contribute to the health of the world‟s oceans by recognising and rewarding sustainable fishing practices, influencing the choices people make when buying seafood and working with our partners to transform the seafood market to a sustainable basis.

Vision : Our vision is of the world‟s oceans teeming with life, and seafood supplies safeguarded for this and future generations.

✓ **Bureau of Energy Efficiency (BEE) of Govt. of India**

Mission : The mission of the Bureau of Energy Efficiency is to assist in developing policies and strategies with a thrust on self-regulation and market pri nciples, within the overall framework of the Energy Conservation Act, 2001 with the primary objective of reducing energy intensity of the Indian economy.

✓ **Cradle to Cradle certification**

Greenwashing

Greenwashing is the process of conveying a false impression or misleading information about how a company's products are environmentally sound. Greenwashing involves making an unsubstantiated claim to deceive consumers into believing that a company's products are environmentally friendly or have a greater positive environmental impact than they actually do.

Also known as “green sheen,” greenwashing is an attempt to capitalize on the growing demand for environmentally sound products, whether that means they are more natural, healthier, free of chemicals, recyclable, or less wasteful of natural resources.

The term originated in the 1960s, when the hotel industry devised one of the most blatant examples of greenwashing. They placed notices in hotel rooms asking guests to reuse their towels to save the environment. The hotels enjoyed the benefit of lower laundry costs.

More recently, some of the world’s biggest carbon emitters, such as conventional energy companies, have attempted to rebrand themselves as champions of the environment. Products are greenwashed through a process of renaming, rebranding, or repackaging them. Greenwashed products might convey the idea that they’re more natural, wholesome, or free of chemicals than competing brands.

CASE STUDY 01 : A Study of Consumer Perspective towards Eco Labelling in Delhi NCR, India Conducted By : Shruti Jain and Manisha Raj Verma In 2019

Main Findings N=148

1.The awareness on eco labels among Delhi cites is quite low. Though a majority of them are aware/ heard of the term „eco- labels“ but most of them failed to recognize various eco- labels (logos).

2. A majority of 85.81% respondents were able to recognize BEE star label easily because of high degree of advertisement on this specific eco label since 2006.

3.There exists a moderately high degree of environmental motivation among the respondents.

4.There is no difference in the level of “environmental motivation” and “Awareness on Ecolabels” between male and female.

5.A majority of 48% of respondents are unsure that Eco labelled products are of high retail costs.

6.A majority of 54% responded low awareness about eco labels as a major reason that

prevents consumers to buy Eco labelled products followed by high cost of Eco labelled products (22.30%), unsure about the eco friendliness of the product (13.50%), unavailability of Eco labelled products in the market (6.10%) and inferior quality of these products (4.10%)

7.A majority of 38.50% respondents agree to the statement believe that eco label is very credible, 31.8%, 30.4, 34.5%, 37.8% and 39.2% of respondents are neutral to the fact that Eco labelled products are famous in India, eco labelling is marketing strategy, eco labelling is a success story in India, eco label has become a way through which manufacturers are able to make misleading claims and Eco labelled goods are of superior quality and performance respectively.

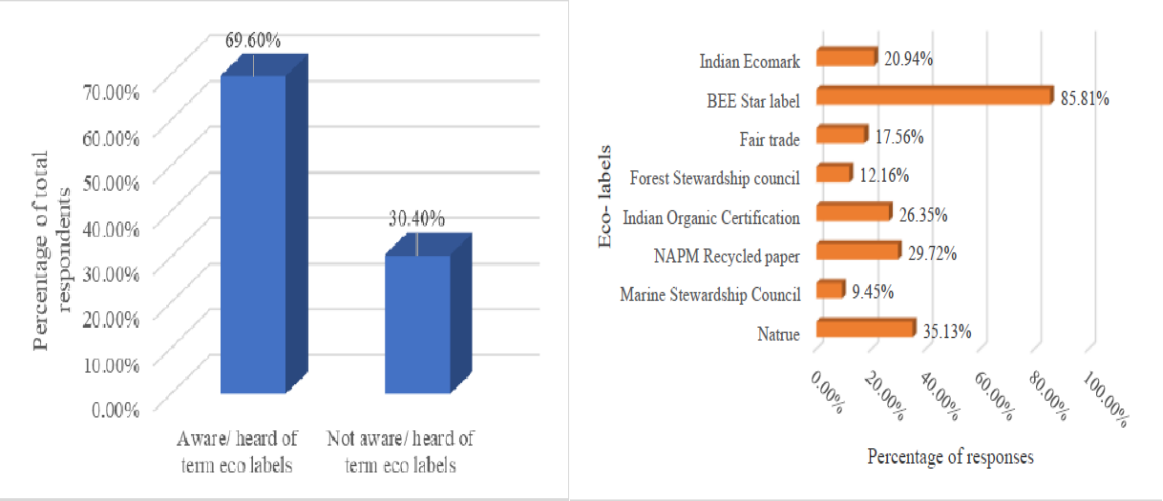


Plate 2:AWARENESS OF RESPONDENTS ON SPECIFIC ECO LABELS

out of 148 respondents, 103 respondents were aware or heard of the term eco- label while remaining 45 respondents were unaware of the term. Thus, in a crux, 69.9% of sample responded yes while 30.40% responded no to the given question on awareness of the term eco-labels.

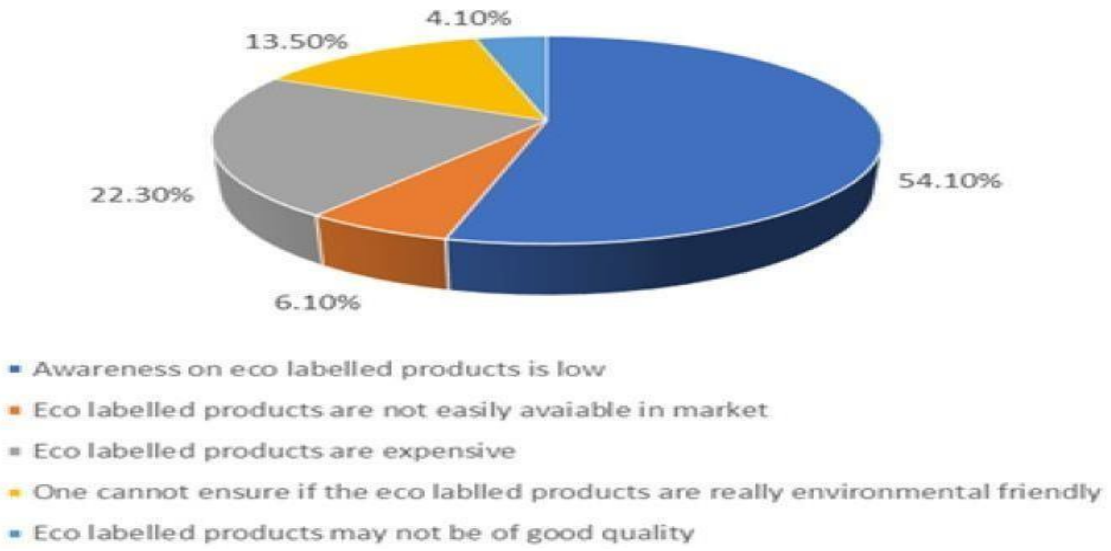


FIGURE 3: PERCEPTIONS OF RESPONDENT ON THE FACTOR THAT PREVENTS CONSUMERS FROM BUYING ECO LABELLED PRODUCTS

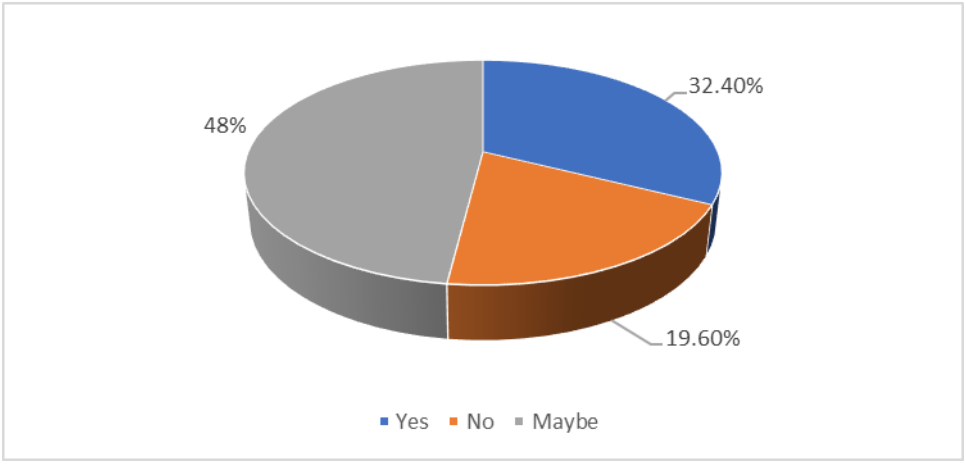


FIGURE 4: Perception of respondents on price of eco labelled products

Conclusion and Recommendations

From the above study, we got to know that eco labels is a communication tool which's' main purpose is to guide and create awareness of environmental purchasing among the consumers. From the given research we understood that the level of awareness of eco labels among the respondents is quite low while the level of environmental motivation is moderately high. Respondents failed to recognize various eco labels' logo except the BEE star label. This is due to high degree of advertisement on this specific eco label by Ministry of Power since 2006. Secondly, we analyzed equal level of awareness and level of environmental motivation among the respondents regarding the subject. Lastly, we found

that price is a major factor which highly influence the decision to purchase green among Delhiites. Also, respondents perceive a neutral approach towards credibility and quality of eco labelled products. We believe that it is required that government officials should create awareness among the consumers to change consumer's buying behavior.

Recommendations

1. Also, instead of creating several eco labels for the same kind of product, the concerned authorities should try to create comprehensive eco label for one type of product covering all the aspects of sustainability. This will help in providing clear understanding of the eco label to the consumers and would avoid duplication of efforts and confusion.
2. Since there is low awareness of the eco labels among the respondents, the government of India must take initiative to create awareness about the same as they once created for BEE star label in 2006.
3. It has been observed that people face problems in understanding the eco labels and most of them fail to recognize which eco label supports what. Thus, it is required to make simpler eco labels rather than complex for easy recognition and understanding.
4. Since Indians have higher marginal propensity to save (MPS), they tend to purchase low cost products providing same level of satisfaction as provided by high cost products. Thus, manufacturers should try to keep the prices of eco labelled products at least equal to that of conventional products to promote green purchasing at low costs.

CASE STUDY 02 : A STUDY ON IMPACT OF ECO-LABELLING ONCONSUMER BUYING BEHAVIOUR

CONDUCTED BY

Consumer Education & Research Centre - Environmental Information System Centre onEnvironment Literacy - Eco-labelling and Eco-friendly Products (CERC-ENVIS), 2019

KEY FINDINGS (N=292)

➢ Overall, 82% of respondents were aware of environmentally friendly products and were concerned about environmental issues.

➢ Respondents are willing to pay more for eco-labelled products. They (52% of the respondents) were aware and willing to pay more for the Ecolabelled products

➢ The product with less impact on the environment were preferred by 59% of respondents. But 60% respondents are not aware of such products in the market.

➢ Although many respondents preferred products with eco-features, quality (87%) and price (62%) were much more important when it came to an actual purchase decision.

➢ Purchase behaviour varied depending on product category with eco label like organic food (29%), food items (25%), clothes/apparel (22%) and electrical/electronic items (21%).

➢ Social Media (70%) has an influence on more than 70% of respondents which is the main source of the awareness of eco-friendly products.

CONCLUSION AND RECOMMENDATIONS

✓ Consumers are more interested in environmental friendly products and practices.

✓ Ecolabel provides importance of ecological, environmental, health and sustainability of products which attracts the customers.

✓ Difficult to identify the superior quility of products among the ecolabelled products.

✓ Price behaviour is higher for Ecolabelled products as compared to standard products which are not Ecolabelled. Therefore, government has to provide subsidy for Ecolabelled products which is helpful for both producers and consumers.

✓ There is a need for promotional activities of Ecolabels and eco-friendly products.

BIBLIOGRAPHY

ANONYMOUS., 2019, A Study on Impact of Eco-Labelling on Consumer Buying Behaviour, Survey Report, CERC-ENVIS, Government of India.

FiBL & IFOAM – ORGANICS INTERNATIONAL Survey 2021

http://cercenvis.nic.in/ecolab.html

http://www.fao.org/3/y2789e/y2789e06.htm

https://apeda.gov.in/apedawebsite/organic/data.htm#Total_farm_area

https://cpcb.nic.in/eco-scheme/

Ministry of Environment, Forests and Climate Change, Govt of India and ConsumerEducation & Research Centre and India Organic MacKenzie, D.,1991, Green Design: Design for the Environment, London, Laurence King Publishing

OLEG BAZALUK et al. 2020, Dynamic Development of the Global Organic Food Market and Opportunities for Ukraine, Sustainability , 12: 6963.

RALPH HORNE,2009, Limits to Labels: The Role of Eco-Labels in the Assessment of Product Sustainability and Routes to Sustainable Consumption, *Inter. J. of Consumer Studies,* 175-179.

SHAMS AND RASUL,1995, Eco-labelling and environmental policy efforts in developing countries, Intereconomics **30**(3): 143-149.

SHRUTI, J. AND MANISHA, R.V., 2019, A Study of Consumer Perspective towards Eco-Labellingin Delhi NCR, India *Pram. Resea. J.*, **9**(6).

www.cuts-international.org,

Discussion

1. what is the market share of Eco-labelled products?

In 2020, eco-friendly products had a market share of **13.4 %** in the product groups surveyed. At 5.5 percentage points, the indicator has increased significantly compared to 2019. This is mainly due to the increase in the market share of A+ cars from 10.0 % to 27.5 % as a result of the comprehensive government subsidies.

2. Under which ministry Eco labelling is done?

Ministry of Environment and Forest climate change

3. Is there any institutional or organizational structure for Eco- labelling?

No, in India their is no particular organizational sturucture it is under taken by NGO and other private agencies.

4. will it be possible for all the products to check Eco- friendly products?

Eco labelling is based on the life cycle approach considers even source of resources and up to disposal stage. It follows a cradle-to-grave approach so there is a difficult in tracing

the origin of the any agricultural product available in market. It is not possible to follow the all the stages of all the products.

5. Greenwashing term is commom?

Greenwashing is the process of conveying a false impression or misleading information about how a company's products are environmentally sound. Greenwashing involves making an unsubstantiated claim to deceive consumers into believing that a company's products are environmentally friendly or have a greater positive environmental impact than they actually do.

6. what is the level of awareness about Eco-labelling?

Awareness about Eco-labelling is comparatively low among the consumers because most of the population belongs to below poverty line they least bothered about eco friendly products their aim is to full fill basic needs rather than this.

7.Global case study of Eco-labelling?

It reveal that

Consumers are more interested in environmental friendly products and practices.

- ✓ Ecolabel provides importance of ecological, environmental, health and sustainability of products which attracts the customers.
- ✓ Difficult to identify the superior quility of products among the ecolabelled products.
- ✓ Price behaviour is higher for Ecolabelled products as compared to standard products which are not Ecolabelled. Therefore, government has to provide subsidy for Ecolabelled products which is helpful for both producers and consumers.
- ✓ There is a need for promotional activities of Ecolabels and eco-friendly products

8. what is the role of Extension agent in eco labeling?

Extension agent play a vital role in bringing the great awareness about the labeling of eco friendly product among the farmer producer which helps to compete in global market and consumer to get assured quality product.

9. what is the process of Registration for eco labeling?

The products should meet both environmental and quality criteria set by the Bureau of Indian Standards (BIS).

The programme is run by the Ministry of Environment of Forests and Climate Change (MoEF&CC), with the technical advice of the Central Pollution Control Board (CPCB).

- Non-refundable application fee of Rs.500/ per application.
- Testing fee charged by independent laboratories for samples taken prior to the grant of a license.
- Annual license fee at the rate of Rs.500/ per license.
- Renewal Application fee of Rs.300/ per application is charged when the license is due for renewal.
- Marking fee (depending upon the volume of the annual production)

10. Can Maggie be a environmentally product?

No , because it contains lead more than 0.003 ppm it is not permeable under labeled products.