



**Live Webinar: Indigenous Solutions to
Formaldehyde Emissions from the Composite
Wood Products**

Content

NCCF, as an Organisation

1. Effects of formaldehyde emissions from composite wood products on human health

2. India's take on handling the problem: Formaldehyde emissions from composite wood products

3. Safeboards Standards: Indigenous certification standards to cap formaldehyde emissions from composite wood products

4. The certified composite wood products against Safeboards Standards can minimize the harmful effects on human health

5. Development stages of Safeboards Standards

6. Indigenous solutions to formaldehyde emissions from the composite wood products



*Network for Certification
and Conservation of Forests*

Established in 2015 as a not for profit society, NCCF as emerged as a think tank and a credible organisation, working for policy advocacy and conservation of environment and natural resources through development of globally benchmarked sustainability standards and endeavouring to their large scale application through promotions, awareness raising and capacity building of stakeholders.

Core Working Areas



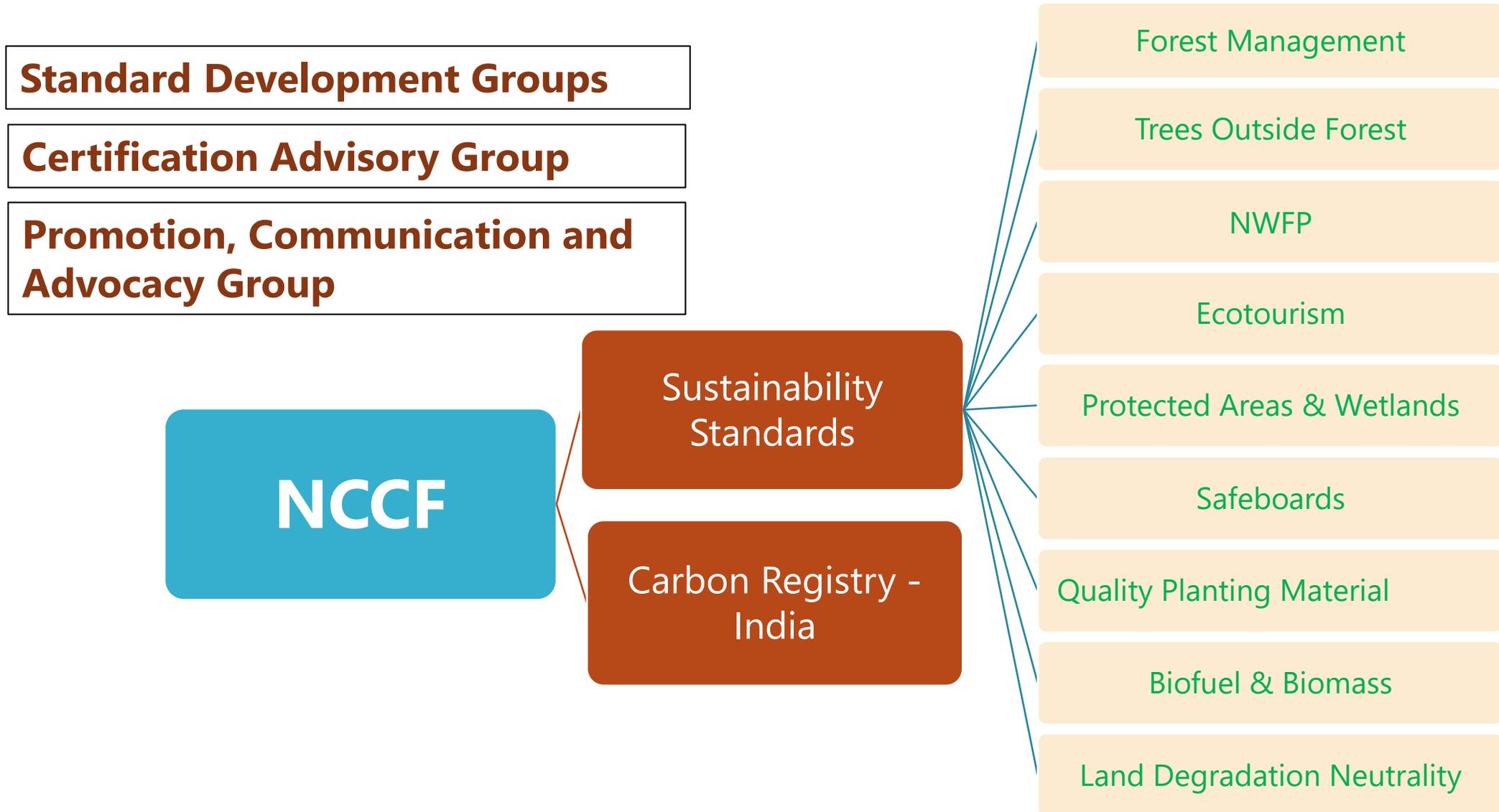
Associations and Memberships

Member of
Programme for the
Endorsement of
Forest Certification
(PEFC) Alliance

Member of IUCN

Observer status with
UNCCD as a Civil
Society Organization

NCCF Sustainability Standards



Standards for Sustainability

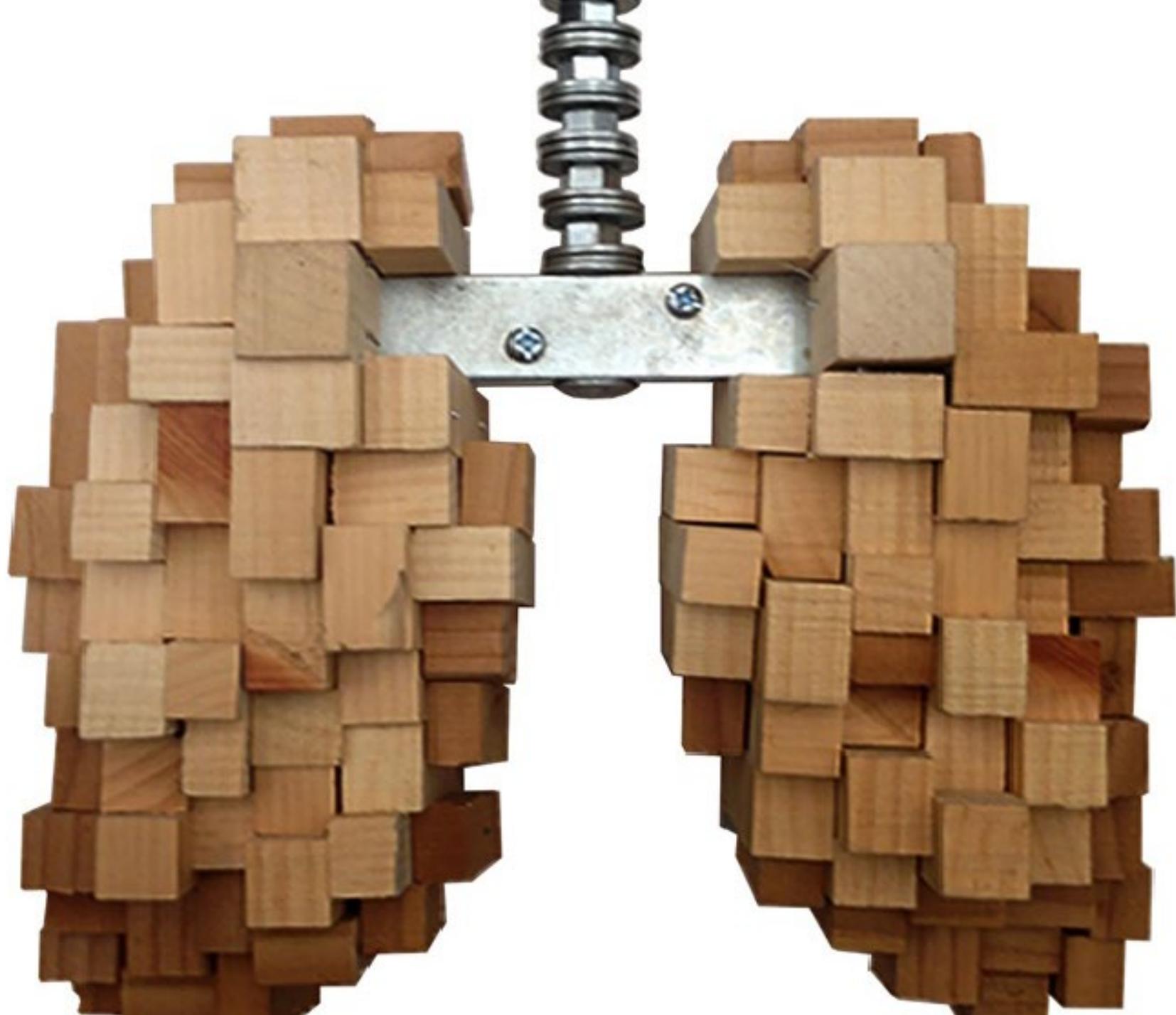
These standards offer huge potential to ensure sustainable management of natural resources

Accelerate outcomes of SDG's, climate resilience, land restoration and biodiversity conservation while ensuring community rights, livelihoods, health and labour welfare, forest rights, traceability, quality, value chains and export promotion.

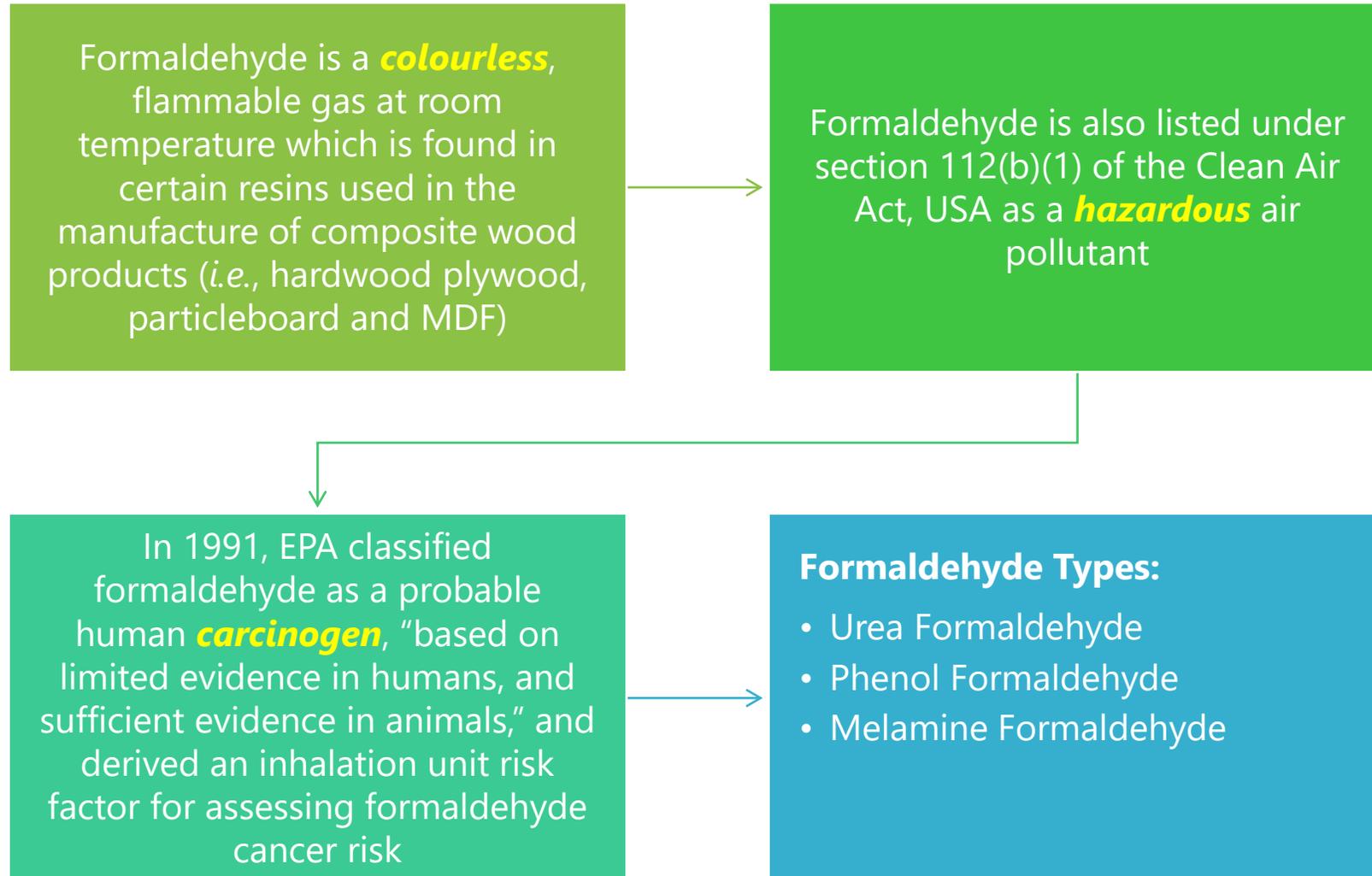
Meeting the objectives of various international commitments under the UNFCCC, UNCCD and UNCBD etc.

Help the country in increasing the manufacturing of certified wood products and boost environmentally conscious consumerism in the domestic market.

**Effects of
formaldehyde
emissions
from
composite
wood
products on
human health**



Air – Primary Source of Formaldehyde Exposure



Formaldehyde Health Effects

Sick-Building Syndrome arising due to lack of Fresh Air, Paint Fumes, Construction Materials, Lead or Toxic Paint, etc

Short-term Effects

Burning

Skin Irritation

Severe Coughing

Inflammation of the Lungs

Irregular Heartbeat

Long-term Effects

Sensitization

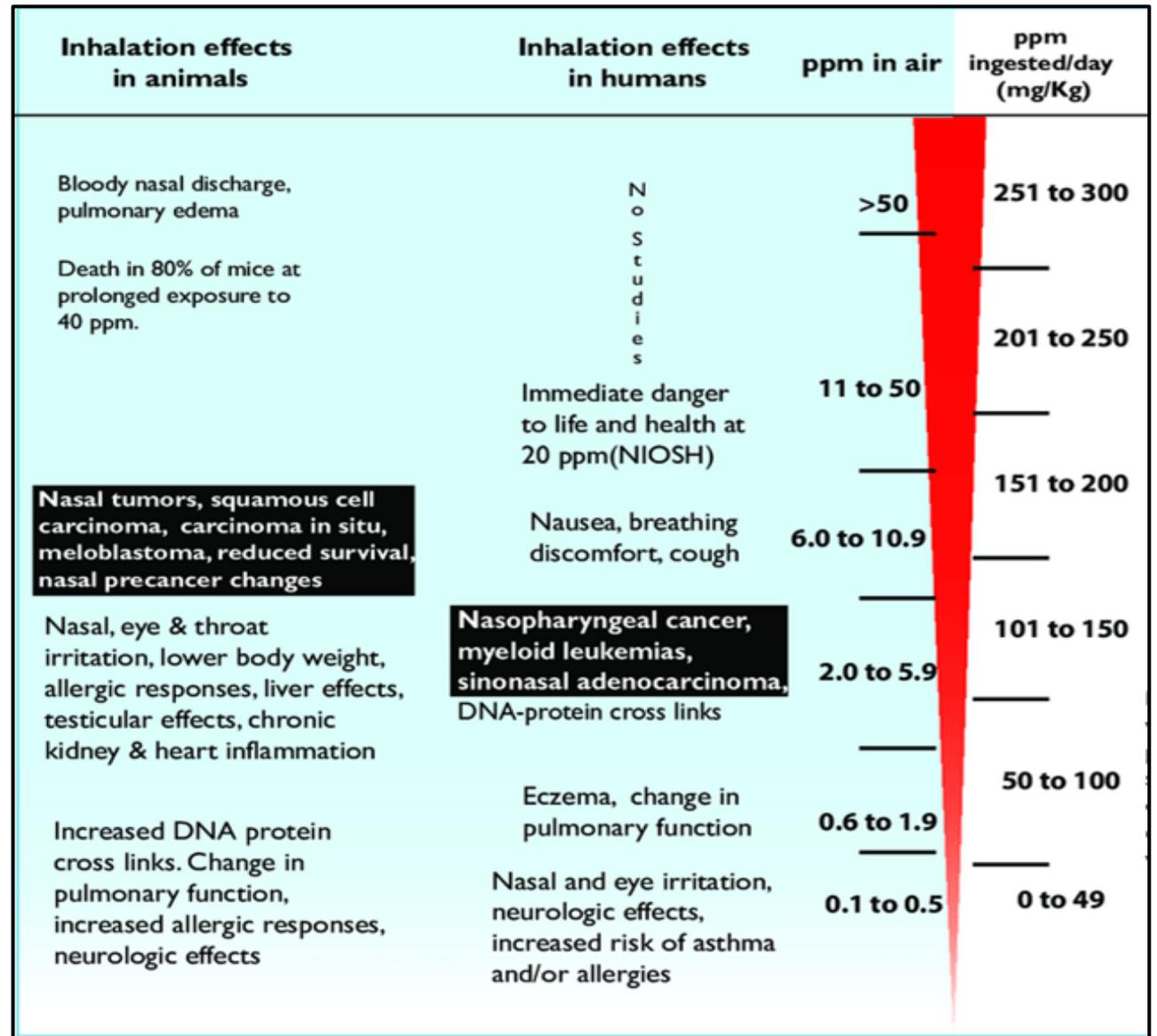
Eczema

Cancer

Formaldehyde is a highly reactive molecule that can be directly irritating to tissues with which it comes into contact.

Human and animal studies indicate that formaldehyde, at certain exposure levels, can be irritating to the upper respiratory tract and eyes with inhalation exposure, to the skin with dermal exposure, and to the gastrointestinal tract with oral exposure.

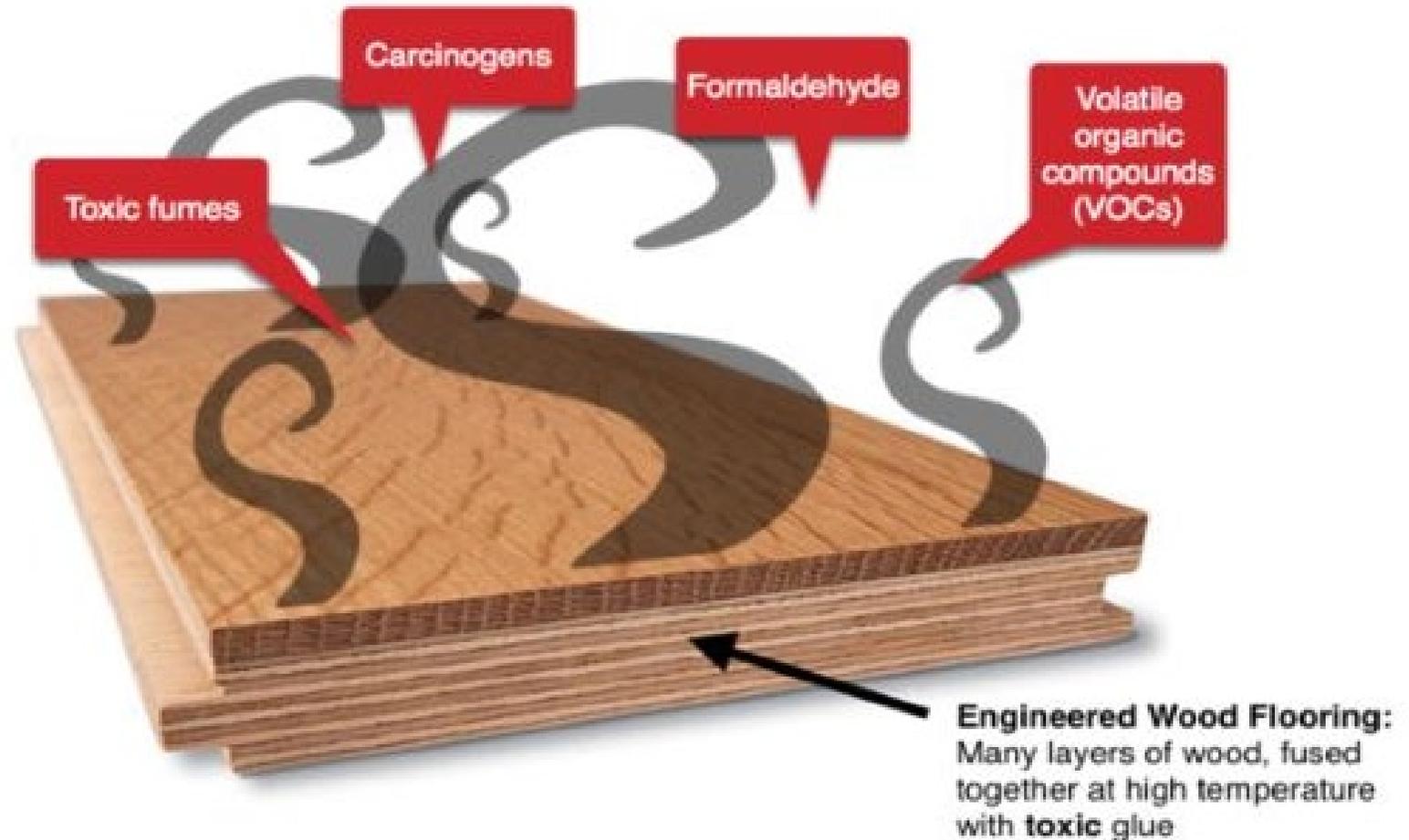
Formaldehyde-induced noncancer and cancer effects appear to occur only at portals-of-entry (i.e., upper respiratory tract, gastrointestinal tract, and skin).



India's take on handling the problem:

Formaldehyde emissions from composite wood products

OUTGASSING



The reclassification of formaldehyde by the International Agency for research on Cancer **as carcinogenic to humans has triggered enormous concern globally**

Lack of awareness in India on the formaldehyde emissions from UF bonded panels is even more worrisome

Furniture is a functionally needed utility value keeping in view the ergonomic design for good working conditions

One of the **most neglected aspects** in India **is the awareness to keep the level of formaldehyde emissions released from the furniture to acceptable level** in the office or home interiors, more particularly the formaldehyde emissions from the wood panels used in the fabrication of furniture like Plywood, Blockboard, Particleboard and Medium Density Fibreboards (MDF)

India does not have any mandatory regulations on control of formaldehyde emissions, however globally various countries have regulations on this

Existing International Standards

CARB ATCM 93120

Regulation capping products emitting formaldehyde to be sold in California

EPA TSCA Title VI

Regulation capping products emitting formaldehyde to be sold in United States (2017)

EN 13986

Regulation capping products emitting formaldehyde to be sold in Austria, Denmark, Germany & Sweden

JIS A 5905/8

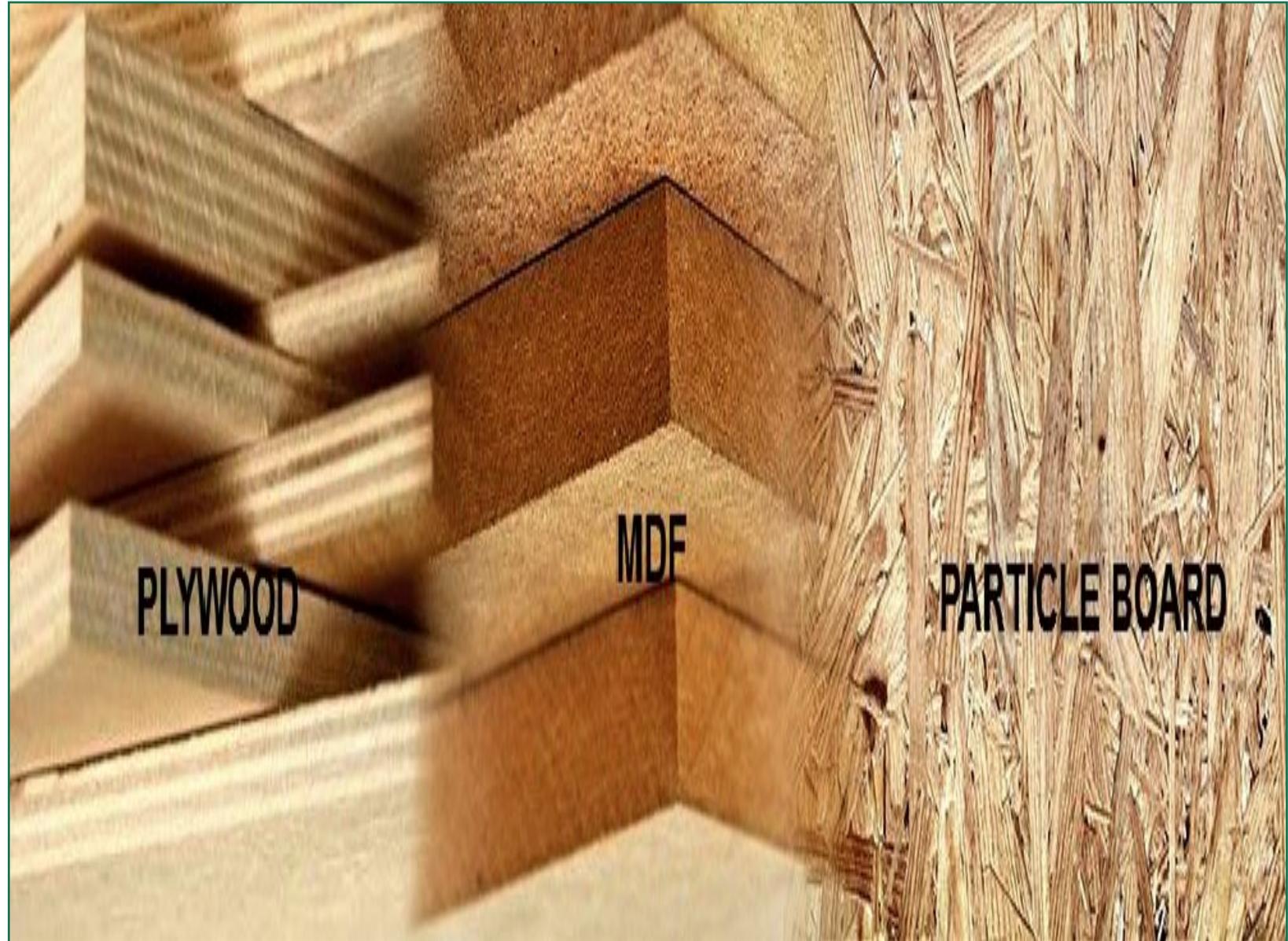
Capping products emitting formaldehyde to be sold in Japan

AS/NZS 1859

Capping products emitting formaldehyde to be sold in Australia & New Zealand

Safeboards Standards:

Indigenous certification standards to cap formaldehyde emissions from composite wood products





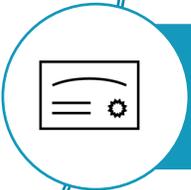
Composite board products including plywood, MDF, particleboard have emerged as the most widely used and dominant building materials owing to their characteristics such as light weight, corrosion-free, insulation and cost-effectiveness.



Formaldehyde used as a fixative has emerged as an important component in wood processing industries.



Non combustive process puts formaldehyde in a harmful list of elements causing indoor air pollution.



India is a major export hub. Export access to these markets is dependent on compliance of industry to “Internationally Benchmarked Guidelines of Certification”



Despite exporting large amount of composite wood products, India doesn't have a certification process to stand competitive in the global market

Benefits of Indigenous Certification Standards



Indigenous standards rise the quality of products equivalent to internationally benchmarked standards/guidelines



Helps in reducing emission levels of composite wood products



High value-added products with increased saleable value



Provide an edge over uncertified products



Handy tool for manufacturers, government agencies, architects and corporates to fulfil demands of low-emitting composite wood products



Leading to holistic environment and human health quality

Objectives of Safeboards Standards

India does not have any *standards* to cap emissions from composite-wood products, resulting in majority of plywood products *not qualifying* most basic level of emission standards categories of other import-oriented countries

Exports of such products in global market gets difficult

Improve the deteriorating quality of health of public in India

It will be a handy tool for manufacturers, government agencies, architects, corporate to fulfill their *demand of low-emitting composite wood products* and will also provide an edge to manufacturers for getting certified their products internationally compliant

Formaldehyde Market 2019-2027

Key Market Findings

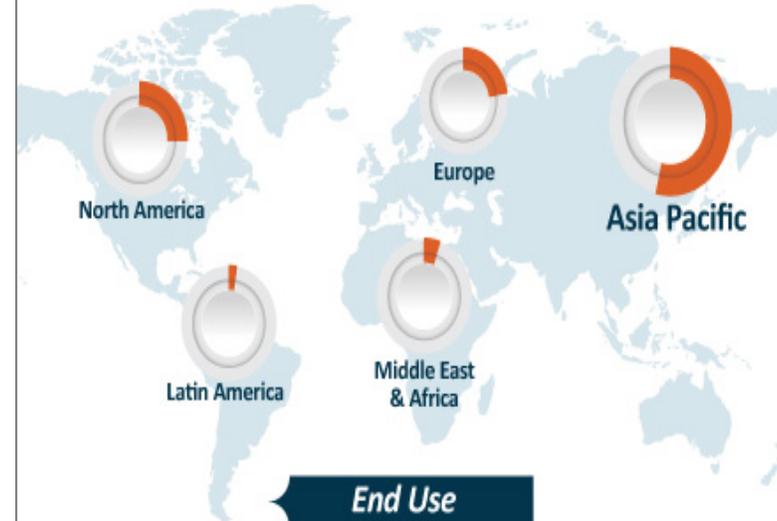


Amidst Mounting Health Concerns, Stakeholders Aim to Launch Safer Products



Uptake of Formaldehyde-based Resins Gain Traction

Market Share by Region, 2019



End Use

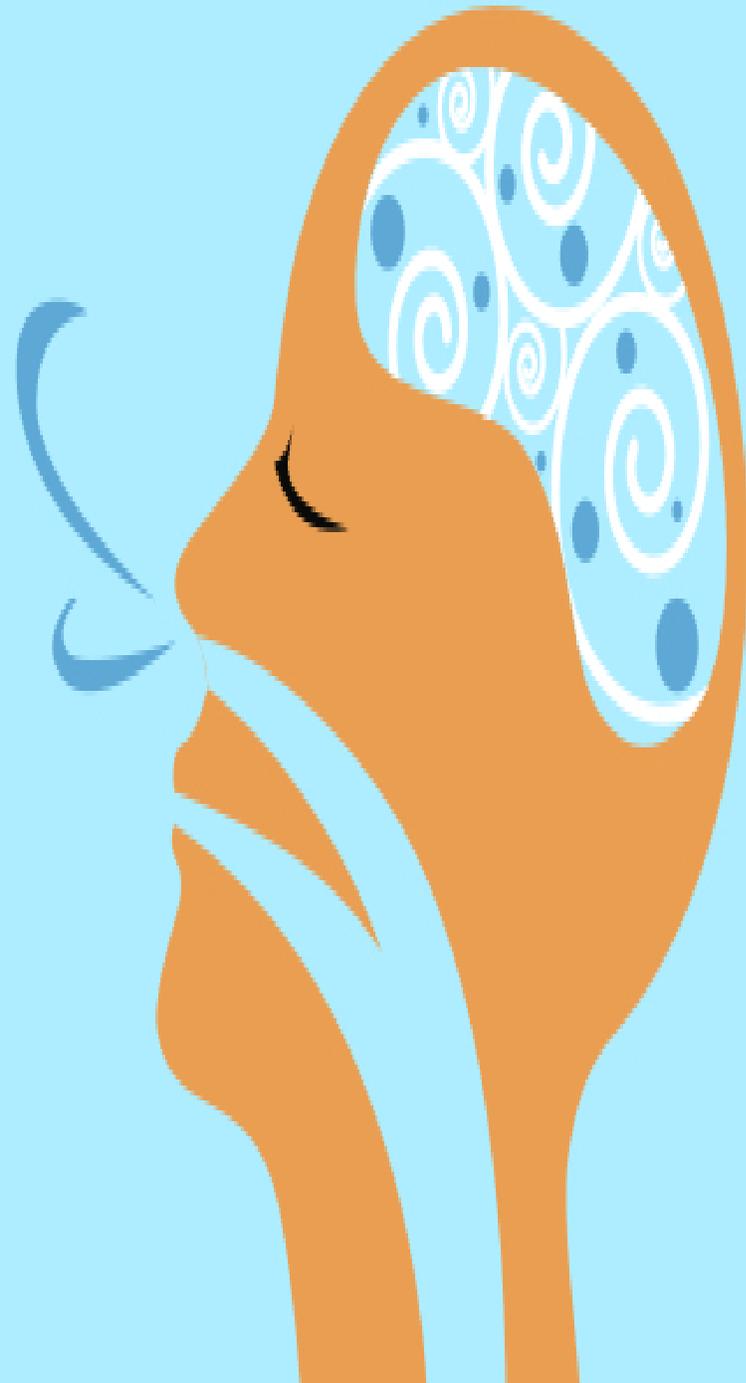


~3% CAGR (2019-2027)

Market Value 2027

~US\$ 11.5Bn

*Certified
composite wood
products against
Safeboards
Standards can
minimize the
harmful effects
on human
health*





Public

- Improve indoor air quality
- Improve workers' (at mills) and occupants' (of buildings where such products will be installed) safety and health
- Measurable benefits of green building initiatives on workers' productivity, "there is a direct correlation between increased productivity and employees who love being in their workspace"
- Reduce incidents of eye and respiratory irritation, headaches, fatigue and other symptoms of "sick building syndrome"
- Reduce pollution of natural waterways
- Healthier environment for building occupants who are sensitive to certain products



• Industry

- Recognize importance of maintaining environmental health and stability
- Fulfill requirements of maintaining standards at par with international standards
- Set standards as per market requirements
- Improvised management practices to meet international market's and customers' benchmarking
- Avoid confusion of exporters and improvisation of small manufacturers to enter into 'green-building' market
- Meet the clients' requirements of LEED credit attainment (IEQ Credit 4.4)
- Get an opportunity to penetrate international market and sustain against cut-throat competition, as exporters need to have united efforts to meet ever changing market challenges
- Customer satisfaction

Other Benefits of Capped Emission Standards

Implementation of sustainable management and production practices promoting export of Certified products will facilitate "Make in India Programme"

Element of certification standards will also complement various set goals of the SDGs (Sustainable Development Goals) 2030



Development stages of Safeboards Standards



Stakeholder Mapping

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graph TD; A[Stakeholder Mapping] --> B[Constitution of Standards Development Group]; B --> C[Constitution of Technical Working Group]; C --> D[Preparation of Draft Standards]; D --> E[Conducting stakeholder consultation and sensitization workshop];
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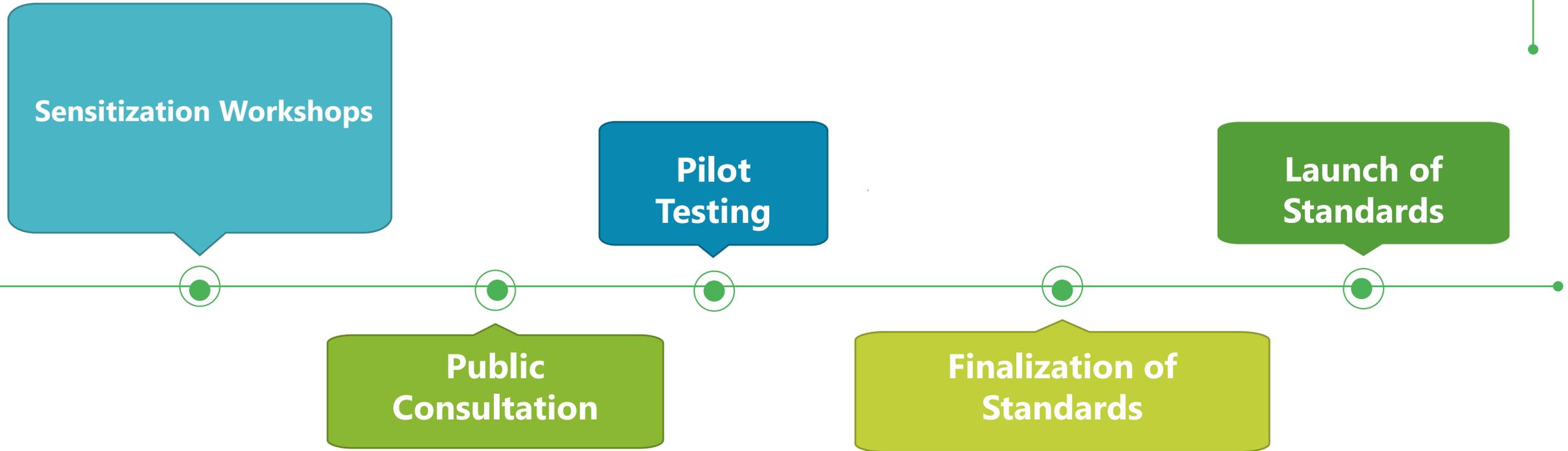
Constitution of Standards Development Group

Constitution of Technical Working Group

Preparation of Draft Standards

Conducting stakeholder consultation and sensitization workshop

Upcoming Activities



Indigenous solutions to formaldehyde emissions from the composite wood products





•Wood products are the primary choice in infrastructure development.



Influence of western standards has had a telling effect on the quality of products manufactured and sold in India.



This is the case in the composite wood industry, especially so among those who export to other countries.



The very high health and environmental standards that have to be met to export has seen the manufacturers trying to reach those standards in India.



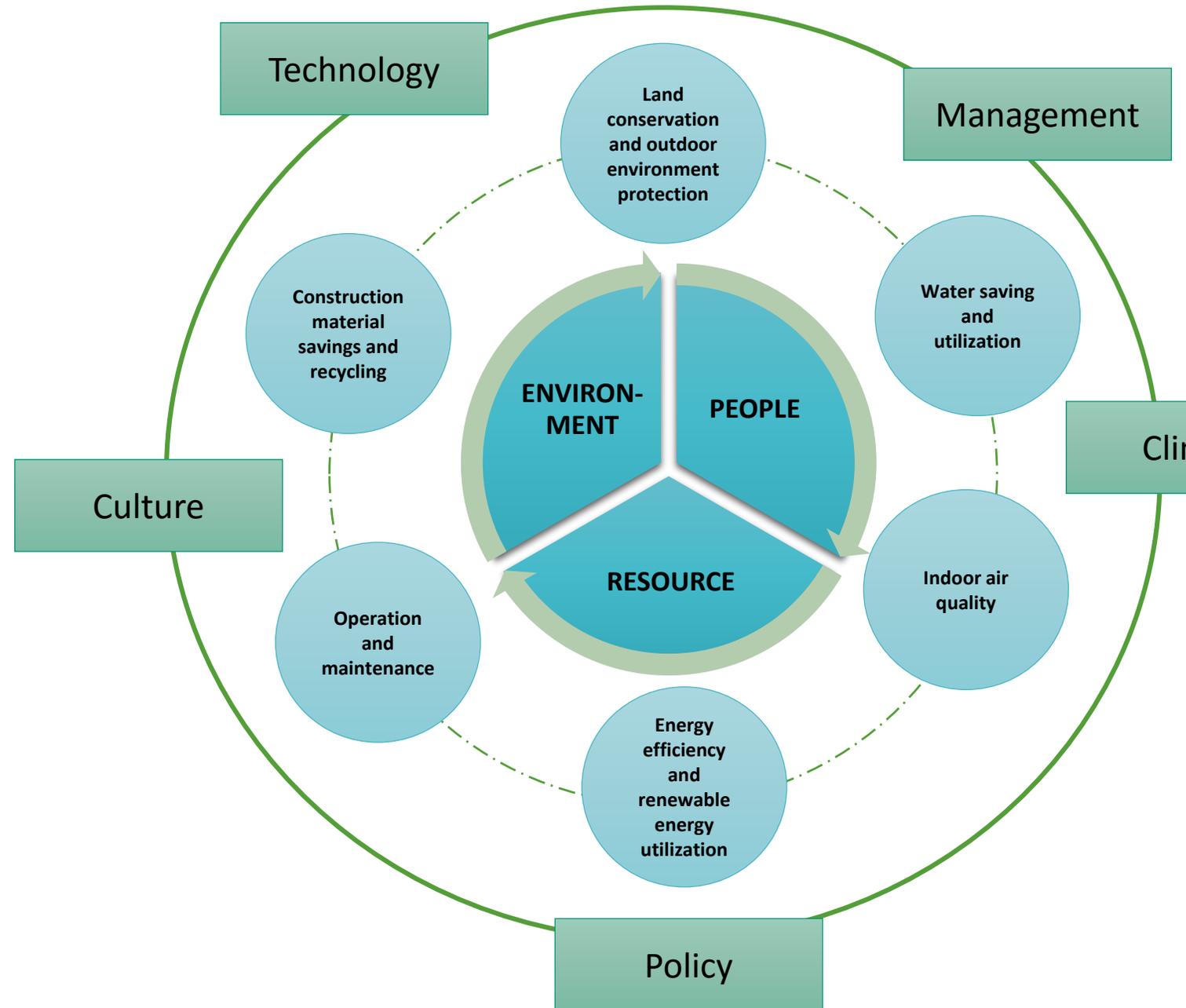
While India is yet to have any set standards for the composite wood products, exporters prefer to follow the European standards.

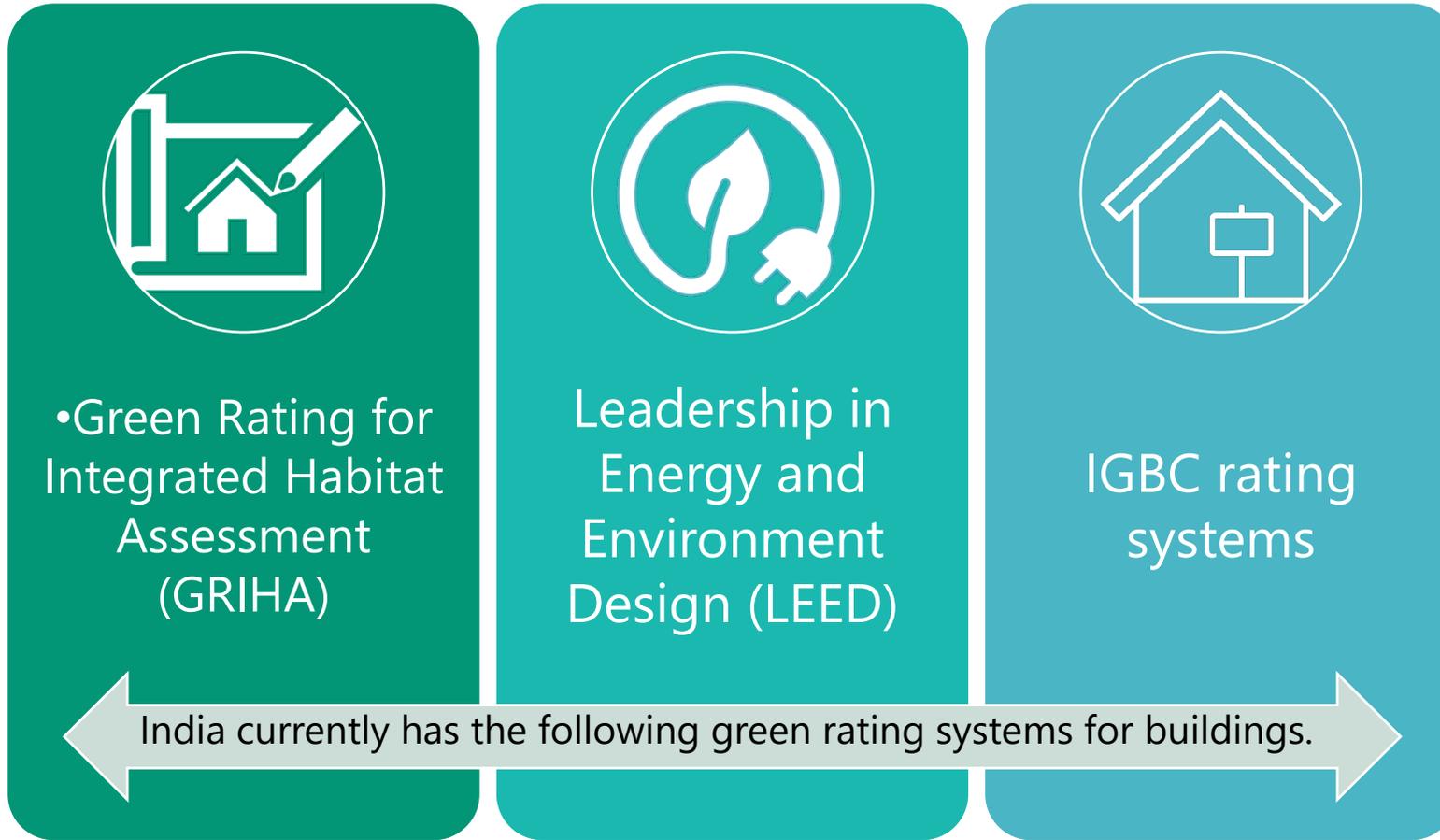
To mitigate the intoxication and promote sustainable living, Green Buildings came into existence

Air quality became an important element in the green buildings

UK in 1990 released the first Green Buildings Standards.

India adopted the concept of green buildings standards and promoted it as green rating systems





- Green building rating systems in India are voluntary with no verification and unbiased decision
- With no guidelines in place for environment friendly wood products, NCCF proposed to develop certification standards for composite wood products.

Components of Safeboards Standards



Requirements of Safeboards Standards

1.

Management
System

2.

Quality Control

3.

Emission Limits

4.

Outsourcing

5.

Product
Labeling

6.

Exemptions

1. Management System

Components of Management System to be maintained by the Certified Unit

1.1 Legality

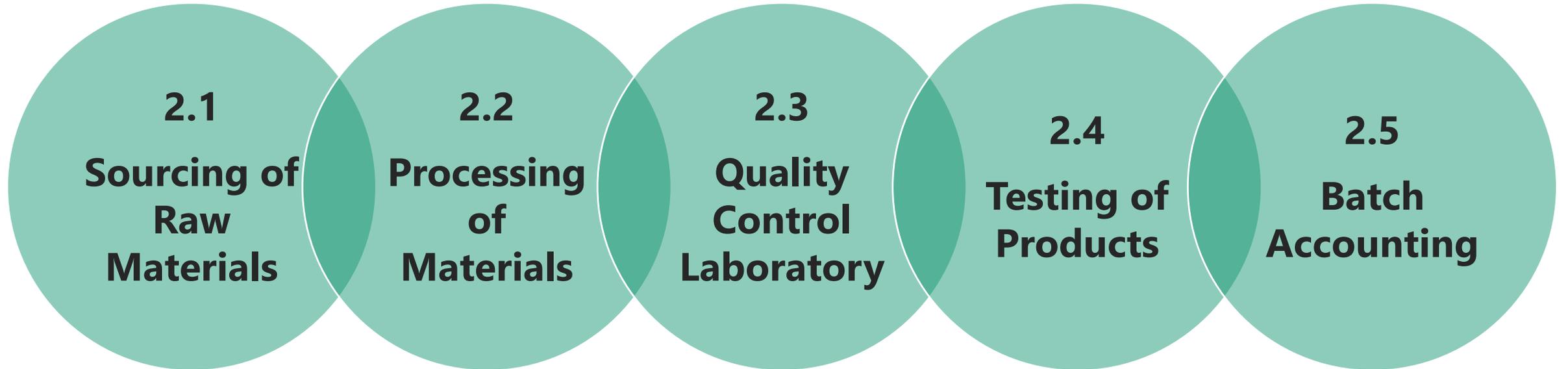
1.2 Responsibilities of Personnel

1.3 Training and Awareness

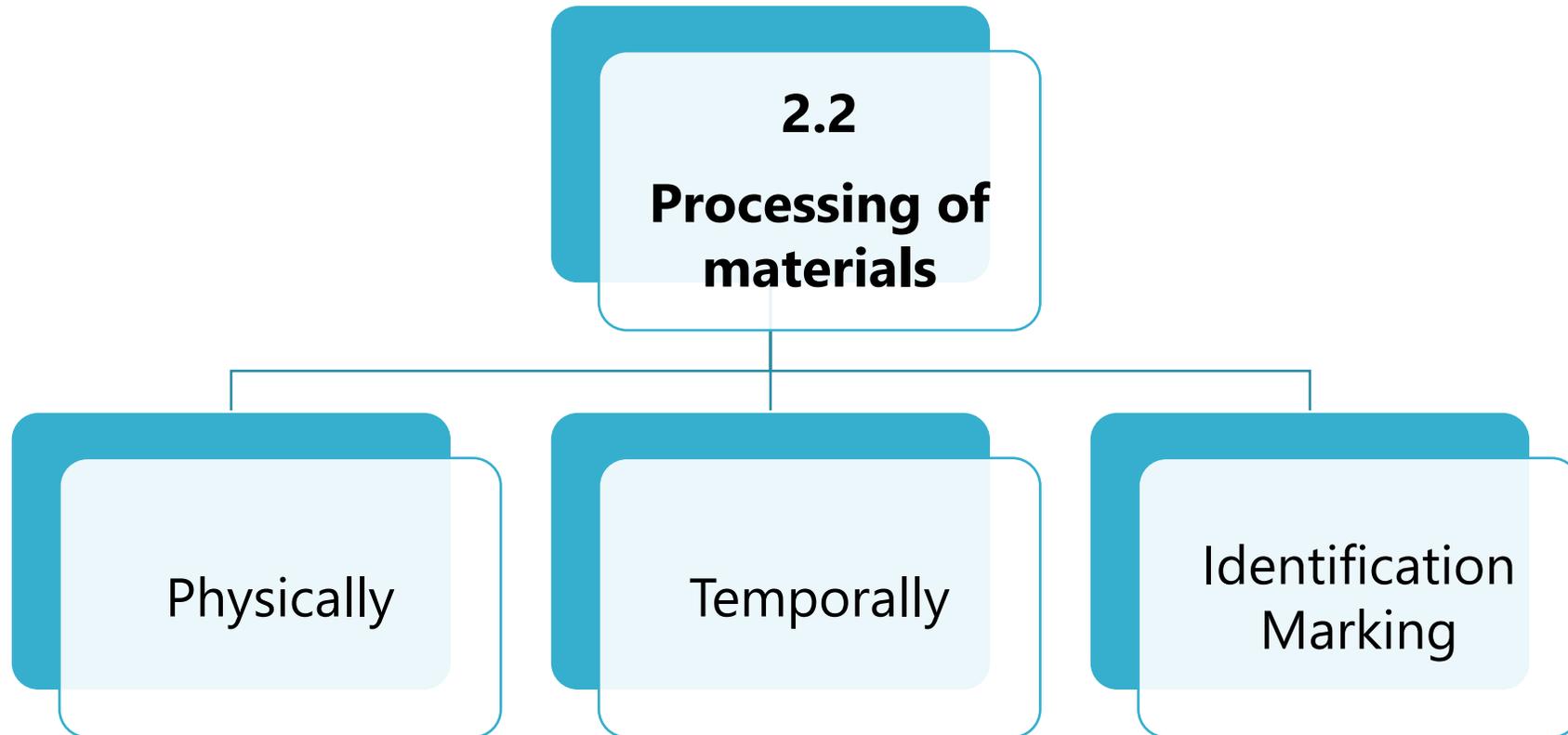
1.4 Maintenance of Records

1.5 Complaints Mechanism

2. Quality Control



2. Quality Control

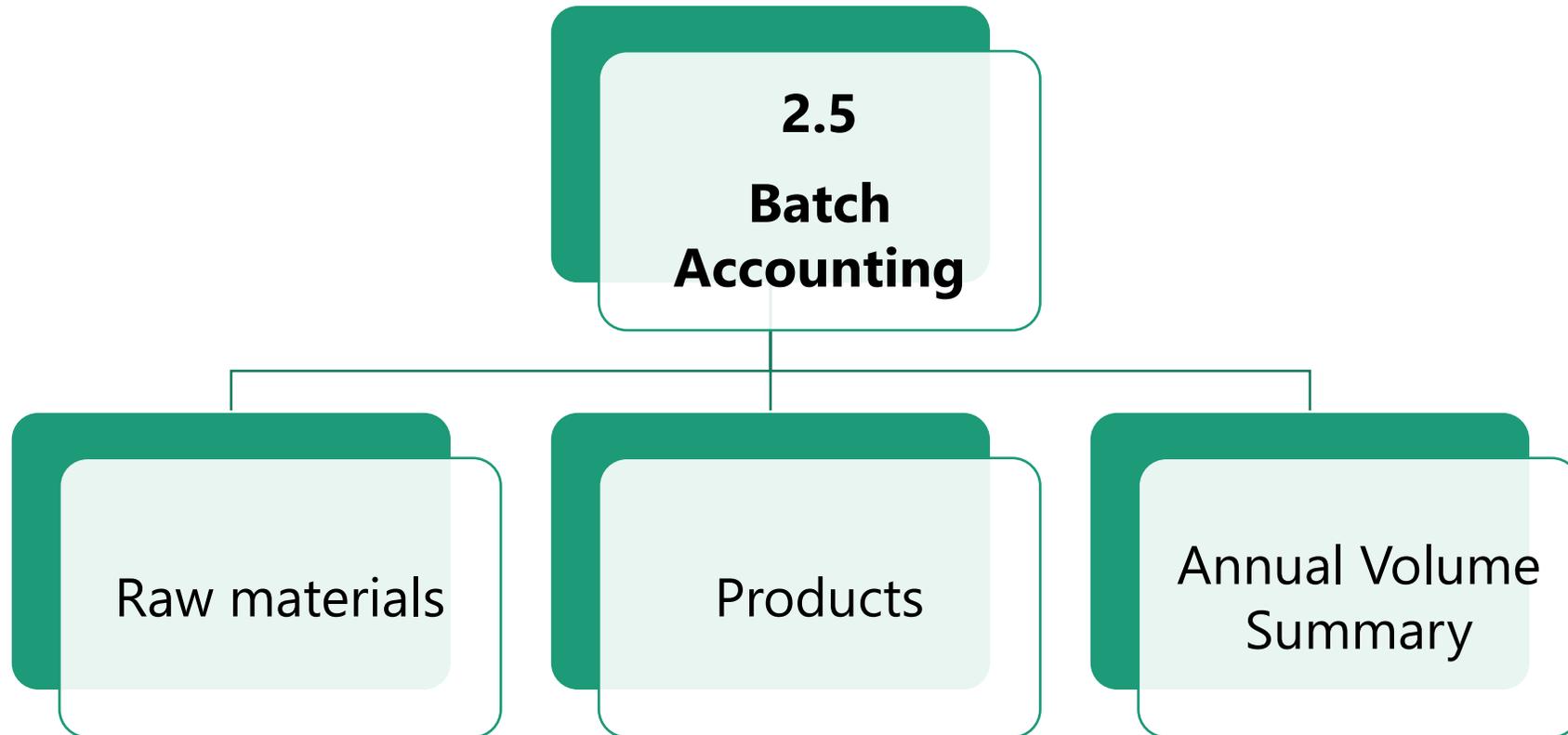


2. Quality Control

2.4 Testing of Products

1. 1 st Party: In-house Testing	2. 3 rd Party: External Testing
a. Frequency of the testing – Per batch	a. Frequency of testing – every six months
b. Sampling norms – Random	b. Sampling norms – Random, expiry period, <i>etc.</i>
c. Size of the samples – TBD	c. Size of the samples – TBD
d. Test method – TBD	d. Test method – TBD
e. Emission Limits – Rank 3, Rank 4 and Rank 5	e. Emission Limits – Rank 3, Rank 4 and Rank 5

2. Quality Control



3. Emission Limits

3.1: Rank 3

3.2: Rank 4

3.3: Rank 5

4. Outsourcing



Any job work or activity which precedes the process to manufacture a product shall be considered a contracted activity.

Contractual process shall at all times follow the requirements as laid down in these standards to keep the products segregated and identified as certified at all times



Through all stages of outsourcing the organisation shall be responsible for ensuring that all outsourced activities and items meet the requirements of these standards including management system requirements.



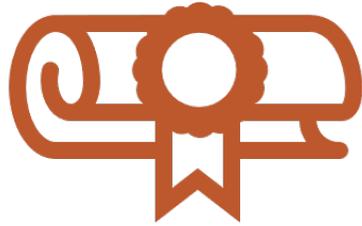
The organisation shall have a written agreement to this effect with all entities to whom activities have been outsourced.

5. Products Labeling

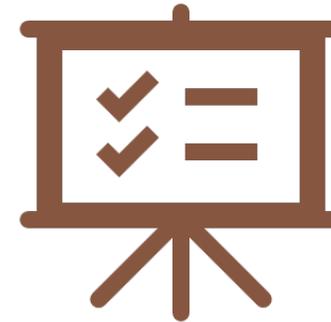
On-Product
Labeling

Off-Product
Labeling

G. Surveillance Requirements



Products once certified against these standards have to undergo assessment annually (within a twelve months' period) to continue their certification over the period



Short-term assessments has to be conducted for products and an organization which needs a scope change in the middle of surveillance audits/assessments

Annexure A: Test Method

1. 1st Party: In-house Testing	2. 3rd Party: External Testing
1.1 Perforator	2.1 Chamber

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Thank you!