Communiqué No.: S-19/PTR-16 Date:27-Apr-16

Announcement for NOCCD

NCCD Cemafroid Training Program 2016 in France

Dear Sir,

As a result of the favourable feedback on last two years trainings conducted at Cemafroid's facility, NCCD has decided to continue this collaboration with Government of France.

It is our intention to conduct 6 more trainings in Paris during the year 2016-17. The commencement of these trainings will be from June 2016.

Nodal Officer for Cold-chain Development (NOCCD) who are interested to participate may revert with nominations and preferred date of travel. Interested participants are kindly requested to send in their nomination and NOC from their State for training with-in the country and outside along with the required information mentioned below.

We will require the following information:

1) *Name of Nominee Participant.*
2) *Name of State / Department.*
3) *Nominee's Contact Details phone/email.*
4) *Passport Number (kindly state if visa for France available).*
5) *Preferred month in 2016 to participate in the training*
   Batch I : 6 to 10 June 2016
   Batch II : 12 to 16 September 2016
   Batch III : 26 to 30 September 2016
   Batch IV : 17 to 21 October 2016
   Batch V : 28 November to 2 December 2016
   Batch VI : 12 to 16 December 2016

Nominations may be sent to NCCD.India@gmail.com.

The modules included in the program are appended in following page. Details of various training offered by Cemafroid *can be seen on their* website.

Feedback from the participants shall determine future modules and similar trainings.

Priority shall be given on first-come basis.NCCD shall be sponsoring the major cost of the training which shall consist of 8 modules over 5 day period in the outskirts of Paris.

NCCD
Secretariat

Course Details

Date: June 2016 onward, Cemafroid Paris

The Curriculum

The curriculum devised by NCCD and to be executed by Cemafroid includes 8 modules to over 5 days.

The training will include expert interactions, case studies and a field visit -The modules are as follows-

a. **NCCD 01 – Refrigeration - Introduction to the production of cold**
Understanding of refrigeration and the application across the major functional segments.

b. **NCCD 02 – Economics of cold chain**
Understanding on the economics which will help improve overall assessment of the value chain, the projects and the future direction in development.

c. **NCCD-03 - The last mile of Cold Chain and urban logistics**
Understanding on last mile delivery systems into focus, and improve integrated project based approach to cold-chain development.

d. **NCCD-04 - Preservation and refrigeration of fruits and vegetables**
Improved understanding on shelf life enhancement as correlated to holistic use of cold-chain. Special focus is given to fresh produce life cycles as this sector has the most to develop and gain in India.

e. **NCCD-05 - HACCP applied to the cold chain**
Understanding of Hazard Analysis and Critical Control Points (HACCP) applied to cold-chain so as to better guide safe handling and for improved value gain.

f. **NCCD-06 - Voluntary certification and Cold Chain**
Learning about voluntary certification in the cold-chain. To understand the theoretical, technical and regulatory framework in maintenance and monitoring of cold chain facilities.

g. **NCCD-07 - Environmental regulations for refrigerants**
Understanding of environmental regulations in relation to refrigerants used. This will harmonise understanding from a global perspective and with other NCCD trainings will help future development to be more environment conscious with the larger agenda of India's continued development of a green cold-chain.

h. **NCCD-08 - Understanding and verification of refrigerated transportation**
Reefer transport is the weakest link in the chain and learning to audit will improve the guidance mechanism for beneficiaries of various schemes.

NCCD shall arrange for French Visa and all travel arrangements, including boarding lodging and local travel at Paris. Each participant shall sign an indemnity and take own medical insurance for foreign travel.

NCCD or CEMAFROID shall not be responsible for personal clothing. Participants are advised to carry suitable warm clothing. Any special food requirements or specific requirements must be communicated along with nomination form/information. Each participant shall be given a certificate after attending the course on suitable completion as per CEMAFROID - NCCD norms.

It may be noted that there is no singular technical qualification for cold-chain and that cold-chain practitioners come from varied technical fields such as Refrigeration (engineering), Horticulture (perishables), Logistics (ware housing and transport) and Farming or processors (producers).

Pedagogical method

Theoretical lectures and course material, language English.

- Case Studies
- Experiences and tutorials
- Field visits
- Interactive discussions lecturers

Course Leaders

- Gérald Cavalier
- Eric Devin
- Florence Moulins
- Jean-Michel Bonnal
- Thomas Michineau
- Others…

Highlights

- Global vision of cold chain and strategies for optimal management of cold chain.
- Optimizing refrigeration systems for the fruit and vegetables sector.
- Understanding of current global standards and regulations in cold chain management.
- Discourse on holistic cold-chain and its applications.
- Understand the economics, potential costs and savings.
- Standards and regulations for manufacturers of refrigerated cargos, cold stores and for inspections by auditors.
- Maintenance of refrigeration units and potential risks.
- Environmental focus on regulations and safeguards for refrigerants.

These trainings are designed to develop capacity for expertise across some of these sectors, specially aimed at those tasked with development of cold-chain. Cold-chain is a highly cross functional domain, one that encompasses life sciences and biology, logistics, hardware, environmental sciences, power, IT and multiple cross-regional practices. Delegate trainees are expected to develop cross-functional understanding across related skill-sets and submitting relevant feedback from these trainings is obligatory.

Outcomes expected

As a convention, NCCD follows a rule of three - before ramping up activities in new ventures, three pilot runs are undertaken. The feedback from the first three set of activities allows for subsequent course corrections and/or amendments before committing to long term plans.

This series of three trainings is the first of action items between Cemafroid and NCCD, as guided by their MoU. Feedback from delegate members will help to guide the formulation of a long term action plan between the two organisations. Feedback from Cemafroid on the participants will also be received. The outcome of a long term action plan with Cemafroid after these trainings is expected. Each trainee participant is expected to have a learning outcome as following-

- Improved understanding on refrigeration, application, monitoring with insights into new technological developments. The training will provide insights into the entire range of activities involved in refrigeration, from its early development to future trends.

- Improved understanding on the efficiency and impact on economics of the total value chain, by applying the cold-chain. There are many differences one can expect between cold-chain in France and India. Yet, universally, cold-chain is perceived to have a higher cost because of energy used in refrigeration. Judiciously applied, it can save not only loss of product, but also safe guard against wastage of input resources, loss in nutritional value, loss of health and others.

- Improved understanding on delivery mechanisms at the front end of the cold-chain, such as urban logistics, temperature controlled merchandising. Last mile logistics require intense planning and as the product is in its last phase of its product life cycle, the hazards and loss impact is relatively higher.

- Improved understanding on environmental impact from cold-chain and mitigating options. Despite having the second largest network of cold stores in the world, India's industrial cold-chain is comparatively less polluting than many other regions. This is largely due to reliance on ammonia based refrigeration and a comparatively minimal transportation base. Understanding global agendas with refrigeration use and harmonising India's future development in accordance is an outcome expected.

- Cold-chain, relies on HACCP norms which are expected to be developed and applied by users. This is especially relevant to trade of fresh fruits and vegetables, where other industrial processes have not made changes to the physical and chemical nature of the produce. An understanding of HACCP development and its application will help the officers guide their beneficiary base.

- No understanding is complete without developing the ability to audit, assess and understand the impact of technologies beyond its immediate application. An understanding on how to audit, troubleshoot and assess transportation aspect of cold-chain will automatically allow the similar in case of static infrastructure, cold stores.

In all, this course is to output an elevated understanding of cold-chain technologies that span across all the links contributing to integrated cold-chain.

Cold-chain
***France* vs India**

- *15 Mm^3 of cold storage capacity and 1,40,000 reefer trucks.*
- 105 Mm^3 of cold storage capacity and 8000 reefer trucks.
- *~40% of installations are HCFC (Hydro-Chloro-Fluro-Carbon) based. High Ozone depleting and global warming concerns.*
- ~95% of installations are ammonia based. Natural refrigerant, environment friendly.
- *Focused on energy savings, renewable energy and efficiency. Highly developed and regulated compliance protocols.*
- Focused on development of integrated chains, energy access, renewable energy and efficiency. Open to innovation & adaptation.
- *Low service footprint; high connectivity infrastructure.*
- Large sub-continental footprint; low rail, road, air and waterways connectivity.
- *Comparatively higher operating scale and integration of source, service and markets.*
- Low economy of scale in operations and integration from farm to fork.
- *Standardised cargo handling, palletised, truck dimensions, containerised – multi-modal.*
- Non-standard operations, truck dimensions, packaging – not multi-modal.
- *Multiple manufacturers of cold-chain equipment and innovators.*
- Developing capacity in manufacturing industry.