Nature-Positive Farming and Food Systems (N+FFS) Standards

Standards for Zero Pesticide Use Agriculture

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Nature-Positive Farming & Wholesome Foods Foundation (N+3F)

Bengaluru, India

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a. **To support farming communities, farmers' organizations (FOs), NGOs, and other agencies** to evolve, establish, and scale-up context-based N+FFS, leading to elimination of the use of synthetic chemical pesticides.
b. **To facilitate the development of regional/territorial and national value/supply chains** for safe, pesticide-free wholesome foods.
c. **To build a knowledge base, serve as a resource organization, and create an enabling environment** for nature-positive farming and wholesome food systems.
d. **To promote equality and social inclusion in N+FFS** by engaging with vulnerable sections like small farmers, Dalits, tribals, women, youth, and consumers with low purchasing power.

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Preface

The Nature-Positive Farming and Food Systems (N+FFS) approach is one of the agriculture and food system approaches alternative to energy and input intensive conventional systems of food production and consumption. Adapting from ***UN Food System Summit Action Track 3***, N+FFS are defined as those context-specific food, feed and fibre production systems that support biodiversity, rebuild fertile soils, protect freshwater supplies, store carbon, create employment, supply safe pesticide-free nutritious foods to nourish the globe, provide rural and indigenous peoples with rights and decent livelihoods and enhance climate resilience and social stability. N+FFS approach strives to promote pesticide-free, safe, ecologically robust and resilient local and regional production systems and food chains.

It believes on the one hand in *total system level interventions* at production level that builds on the intrinsic interconnections of different components of farming like habitat management, maintaining and increasing soil fertility, crop and varietal diversity, using resistant varieties, seed treatment, crop nutrition and irrigation management, etc. It mainly relies on preventive and planned strategies of cropping program. Reactive management is reserved for problems not solved by preventive or planned strategies. On the other hand, it believes that necessary attention should be given for supply chain management beyond production and once the produce moves out of the farm gate.

N+FFS Standards for Zero Pesticide Use Agriculture are a broad set of protocols to be followed by different actors involved in Nature-Positive (N+) production and value chain development, so that the resulting output is ensured of its 'pesticide-free quality' and that the public at large and the consumers in specific are assured of the same. Its main purpose is to guide different actors involved in N+FFS. It will aid the N+FFS Facilitating Organisations (NFO) such as NGOs, farmers organisations, SHG Federations, to organise their N+FFS operations in a structured and credible way in close collaboration with farmers with respect to i) Streamlining N+FFS interventions, ii) Educating farmers on N+FFS practices, iii) Ensuring compliance with N+FFS Standards for Zero Pesticide Use Agriculture by each farmer, iv) Ensuring the traceability of pesticide-free produce and v) Taking necessary action to enhance voluntary compliance.

The N+FFS Standards for Zero Pesticide Use Agriculture will be an integral part of the agreement between the Nature-Positive Farming and Wholesome Foods Foundation (N+3F), the national level support organisation with the mandate to promote N+FFS, and the NFO. With the consent of the N+3F, these standards will be revised by the NFO to reflect local contexts. The N+FFS Standards will also help an accredited external agency to assess/audit whether due processes and steps have been followed by the NFOs as part of Internal Control Systems to assure the quality of N+ produce.

N+FFS Standards for Zero Pesticide Use Agriculture were developed based on the experience of practitioners and by referring to similar standards for crop production in India.

These standards will be reviewed and updated every year by the N+3F. The revisions will consider the learnings from N+FFS practice and from the emerging legal frameworks on ecological agriculture, food safety and nutrition.

Definitions

For the purpose of implementation of N+FFS Standards, the following definitions shall apply:

1. ACCREDITATION
Accreditation means a procedure adopted by the N+3F to ascertain the competence of a Certification Body to certify Internal Control Systems followed by NFOs for ensuring adherence to N+FFS Standards with reference to N+ farms, products, and processes.

2. ACCREDITED CERTIFICATION BODY
An organisation with legal entity complying with accreditation criteria set by N+3F and recognized by the N+3F for certifying NFOs and for granting the right to use the N+ Certification Trademark to the NFOs on behalf of the N+3F, the Accreditation Body.

3. APPLICANT BODY
Applicant body shall mean the organization seeking accreditation.

4. APPROVED FARMERS LIST (AFL)
List of farmers who have practiced N+ agriculture by adhering to N+FFS Standards properly in a particular crop season and who have been approved by N+FFS Guarantee System (NGS).

5. BUFFER ZONE
A clearly defined and identifiable boundary area bordering an N+ production site that is established to limit application of, or contact with prohibited substances from an adjacent area.

6. CERTIFICATION
Certification shall refer to the procedure by which the accredited Certification Body, by way of a Scope Certificate, assures that the production or processing system of the operator has been methodically assessed and conforms to the specified requirements as envisaged in the N+FFS Standards.

7. CERTIFICATION BODY
The Certification Body is the body responsible for inspection and certification of the operators as per the N+FFS Standards.

8. CERTIFICATION TRADEMARK
Certification Trademark shall mean the 'Zero Pesticides Logo', which is owned by the Nature-Positive Farming & Wholesome Foods Foundation (N+3F).

9. CHAIN OF CUSTODY
Chain of custody refers to a situation in which a particular entity is in possession and control of the product when it passes through different steps in a supply chain

including growing, harvesting, processing, handling, and other related activities.

10. COMPLIANCE
Compliance shall mean adherence to the norms laid down under the N+FFS Standards.

11. CONTAMINATION
Includes pollution of farm land and contact of the farm product with any material that would render the product unsuitable for N+FFS certification.

12. CONVENTIONAL FARMING
Farming systems dependent on the use of pesticides, fungicides, and herbicides or on substances which are not in conformity with the basic standards of N+ production.

13. CONVERSION
The process of changing from conventional to N+ methods of production in an agricultural farm. This is also called transition.

14. CONVERSION PERIOD
The time between the start of N+ production methods, and the certification of crops as N+.

15. EQUIVALENT
When two different methods of production are capable of meeting the same objectives, then they are said to be equivalent.

16. FARM UNIT
An agricultural farm, area or production unit managed by a farmer or a group of farmers adopting N+ production methods.

17. FOOD ADDITIVE
Food additive is an external permissible ingredient added to improve the keeping quality, consistency, colour and other physico chemical, sensory properties, wholesomeness, and safety of food

18. GREEN MANURE
Manure consisting of fresh green plant matter, which is ploughed in or turned into the soil to improve it improving health.

19. GROUP CERTIFICATION
Certification of an organized group of producers, processors and exporters with similar farming and production systems and which are in geographical proximity.

20. HAZARD ANALYSIS AND CRITICAL CONTROL POINT (HACCP)
The Hazard Analysis and Critical Control Point (HACCP) is a system which identifies, evaluates, and controls hazards which are significant for food safety. Food safety

management systems based on HACCP are internationally recognized as the most effective way to ensure food safety and to minimize the risk of food poisoning.

21. INGREDIENT
Shall mean any substance, including a food additive, used in the manufacture or preparation of a food and present in the final product although possibly in a modified form.

22. INPUTS BANNED
Those items, the use of which is prohibited in N+ farming.

23. INPUTS PERMITTED
Those items that can be used in N+ farming.

24. INPUTS RESTRICTED
Those items that are allowed in N+ farming, in a restricted manner, after a careful assessment of contamination risk, natural imbalance and other factors arising out of their use. Farmers should consult the local N+FFS Facilitating Organisation for their usage.

25. INSPECTION
Shall include the site visit to verify that the performance of an operation is in accordance with the production or processing standards.

26. INSPECTOR
Shall be the person appointed by the Inspection and Certification Agency to undertake the inspection of an operator.

27. INTERNAL CONTROL SYSTEM (ICS)
A documented quality assurance system that allows the external certification body to delegate the inspection of individual group members to a body identified from within the operators of the group.

28. IRRADIATION
High energy emissions to control microbial pathogens, parasites, and pests in food, to preserve the food or to inhibit physiological processes such as sprouting or ripening.

29. LABELLING
Means any written, printed, or graphic matter that is present on the label, accompanies the food, or is displayed near the food, including that for the purpose of promoting its sale or disposal.

30. MARKETING
Means holding or displaying the produce/product for sale, offering for sale, selling, delivering, or placing on the market in any other form.

31. MULTIPLICATION
The growing of seed / stock / plant material to supply for future production.

32. NATURE-POSITIVE FARMING AND FOOD SYSTEMS (N+FFS)
N+FFS are defined as those context-specific food, feed and fibre production systems that support biodiversity, rebuild fertile soils, protect freshwater supplies, store carbon, create employment, supply safe pesticide-free nutritious foods to nourish the globe, provide rural and indigenous peoples with rights and decent livelihoods and enhance climate resilience and social stability. N+FFS refers to context specific methods of farm production, processing and handling without the use of synthetic pesticides, fungicides, herbicides or by any harmful chemicals.

33. NON-CONFORMITY
Non-conformity is a condition when a product, process, procedure, system, or structure deviates from requirements of the N+FFS Standards.

34. N+FFS FACILITATING ORGANISATION (NFO)
A registered Farmers' Organisation (FO) formed by federating N+ Farmers Group (NFGs) or a development agency like an NGO, which facilitates adoption of N+FFS by a group of farmers in a location. It is responsible for implementing the N+FFS Programme in its working area.

35. N+ FARMERS GROUP (NFG)
It is the group constituted by the farmers participating in N+FFS Programme who are mobilized based on solidarity, mutual familiarity, proximity of their land holdings, and ease of face-to-face meetings. If all the members in an existing functional group (like a producer or SHG) adopt N+FFS then it can be designated as an N+ Farmers Group.

36. N+FFS GUARANTEE SYSTEM (NGS)
N+FFS Guarantee System is a participatory ICS based quality assurance system for N+FFS Standards that delegates the inspection of the activities of individual member N+ farmers to autonomous FOs or CSOs/NGOs termed as NFOs, which in turn are inspected by an external agency on a seasonal basis.

37. Nature-Positive Farming and Wholesome Foods Foundation (N+3F)
It is a support organisation with the mandate to promote N+FFS. Its mandate includes offering need-based guidance to NFOs to implement N+FFS interventions, developing N+FFS Standards, certifying NFOs or accrediting agencies for external assessment and certification, and serving as a resource agency. Nature-Positive Farming and Wholesome Foods Foundation (N+3F) will serve as NPO.

38. NPOP STANDARDS
The standards promoted through the National Programme for Organic Production by the Ministry of Commerce, Government of India.

39. OPERATOR
Shall mean an individual or a business enterprise practicing N+ farming or N+ processing.

40. ORGANIC
Refers to a particular farming system as described in these standards and not to the term used in chemistry.

41. ORGANIC AGRICULTURE
It is a system of farm design and management to create an ecosystem, which can achieve sustainable productivity without the use of artificial external inputs such as chemical fertilizers and pesticides.

42. PACKAGE OF PRACTICES
Guidelines for N+ production and processing established by the N+FFS Facilitating Organisation, for their focus crops, which take into account the agro-ecosystems and socio-cultural systems in a specific location/region.

43. PARALLEL PRODUCTION
Shall mean any production where the same unit is growing, breeding, handling, or processing a particular crop/product both under N+ production system and conventional production system. Also see 'Split Production'.

44. PLANT PROTECTION PRODUCT
Shall mean any substance intended to prevent, destroy, attract, repel or control any pest or disease including unwanted species of plants or animals during production, storage, transport, distribution and processing of food, agricultural commodities, or animal feed.

45. PROCESSING AIDS
A substance or material not consumed as a food ingredient by itself but is used to process raw materials, food, or its ingredients to fulfil a certain technological purpose during treatment or processing and which may result in unintentional but unavoidable presence of residues or derivatives in the final product.

46. PROCESSED PRODUCTS
Processed product shall mean food products resulting from the processing of raw/unprocessed products.

47. QUALITY SYSTEM
Documented procedures, which are established, implemented, and periodically audited to ensure that production, processing, handling, management, certification, accreditation, and other systems meet the specified requirements and outcomes by following standardized protocols.

48. RAW MATERIALS

All ingredients other than food additives.

49. RISK ASSESSMENT
Risk assessment is done to identify and control potential risks in production, processing and handling of N+ products that may infringe upon the N+ nature of the produce/product.

50. SANITIZE
To adequately treat the produce or food-contact surfaces by a process that effectively destroys or substantially reduces the number of vegetative cells of undesirable microorganisms without adversely affecting the safety and quality of the product.

51. SPLIT PRODUCTION
Where only a part of the farm or processing unit has adopted N+ production methods and the rest of it is following conventional methods, but is not verified. Also see 'Parallel Production'.

52. STANDARDS
Shall mean the standards for N+FFS as established by the N+3F.

53. SURVEILLANCE
The measures undertaken to monitor an operator's / certification body's compliance with the standards / criteria to meet the certification / accreditation requirements.

54. GMO AND GMO DERIVATIVES
A plant, animal, microbe, or their derivatives that are transformed through genetic engineering.

N+FFS Standards for Zero Pesticide Use Agriculture

The following section offers the guiding principles, explanations, associated action/s and other additional information related to each N+FFS standard on the below listed components. Under each component, N+FFS standards are divided into two categories vis. 1) the minimum standards to be complied with and 2) the suggested standards for ease of application. The standards given in 'green' are considered as the **"MINIMUM STANDARDS"** that the N+FFS actors are to comply with.

1. Farm Production Standards
2. N+ Produce Aggregation Standards
3. Wild Harvesting
4. Reciprocity with NPOP Standards
5. N+FFS Guarantee System (NGS)
6. Rules for the use of Zero Logo
7. Overriding Rule

Sections & Standards	Explanation, associated action and other additional information
I. Farm Production Standards	
1. Conversion to N+FFS Zero Pesticide Use approach- Requirements and Prerequisites	
Guiding principles a. *It takes many cropping seasons for a farm converted from conventional production systems to N+ production systems to reach a state of natural balance in terms of micro and macro flora and fauna, including insects, weeds and microorganisms, and soil health, which endow resilience against pests and other disturbances. Also, it takes a few cropping seasons for a farmer to comfortably adopt N+FFS approach in her/his farm, by learning through an iterative practice. Therefore, N+FFS needs to be practiced by a farmer in her/his farm or part of the farm for many cropping seasons to reach this state. The N+FFS Standards will guide the farmers in this journey.* **b.** *While 'split production' is allowed in the initial years to encourage farmers to try out N+ production methods approach in their farms, it is envisaged that farmers will appreciate and imbibe the importance of N+FFS approach and adopt it in their entire farms over the years.*	
1.1 If a farmer wants to join the N+FFS programme, she/he needs to apply to the	

NFG and the NFO at least 15 days before the beginning of the cropping season. This application to join the N+FFS Programme needs to be submitted by the interested farmer for each cropping season.	
1.2 The farmer needs to declare to the N+ Farmers Group (NFG) and NFO all her/his plots allocated to N+ production methods and the date of last application of synthetic chemical pesticides. Farmers who already participate in the N+FFS programme but are now expanding the N+FFS approach to new plots also need to declare the last use of unallowed chemical pesticides in the new plots.	This information will be shared to the NFG as part of the application form given by the interested farmer.
1.3 Farm land shall be free from pollutants such as industrial waste, etc	
1.4 Each new farmer must attend a training session on N+ production and N+FFS Standards in the first year of registration.	Key persons engaged at the farm shall be conversant with crop management standards to be followed.
1.5 There is no conversion period required for shifting from conventional system of production to the N+ system of production.	
1.6 Split production*: In the case of annuals,* split production- (i.e.) adopting N+ production methods in part of the landholding- is allowed only in the first two years in a 'parcel of land' located in one spot. By the third year, the whole parcel of land managed by the enrolled farmer in one spot has to be converted to N+ production.	If **'split production'** is followed by a farmer, • Crops produced on conventional plots must be declared by the farmer and have to be indicated on the farm maps with the word "conventional" and preferably in another colour. • Conventional fields need to be at sufficient distance from the N+ fields or must be separated by buffer zones to exclude the risk of drift. • Synthetic chemical pesticides and other prohibited inputs stored by the farmers for use in the conventional unit need to be fully declared by the farmers.

	• Synthetic chemical pesticides should be stored in a safe way, away from food/feed and water, and away from human beings/children and livestock.
1.7 If a farmer opts for split production, she/he should allocate the same plot of land for N+ production in the subsequent seasons.	See the 'Guiding principle'.
1.8 If more than one crop is grown on a parcel of land, N+ production methods to be followed for all the crops, for any one of them to be considered N+.	
1.9 Parallel production (i.e.) growing, handling or storage of the same crop by N+ production methods and by conventional methods by the same farmer is not allowed.	Parallel production is to be avoided since there are high chances for co-mingling of N+ and conventional produce, which will lead to rejection by the buyer. If the local farming situation necessitates allowing parallel production as part of N+ production methods, then the NFO should get the permission of the N+3F. If a farm is engaged in parallel production, the certification programme or Internal Control System (ICS) shall ensure the following: • Buffer zones are demarcated and maintained • N+ and conventional crops are visually distinguishable • Inspections are carried out at critical stages in the cropping period, in a timely manner • Accurate production estimates are made • The N+ and conventional crops are harvested in such a way that there are reliable methods to verify the actual harvest of the respective crops • N+ and conventional crops are harvested, processed, and stored separately • Appropriate storage capacity exists to ensure separate handling

	• The documentation regarding the production is well managed and makes a clear distinction between N+ and conventional production
1.10 *In the case of perennials,* there should be no use of any chemical pesticides from the last harvest of the crop till the harvest.	
1.11 In the case of cereals, pulses and oil seeds, the minimum area to be allocated by the forthcoming farmer to adopt N+ production methods is 0.5 to one acre and in the case of vegetables and spices, it will be 0.3 to 0.5 acre.	This criterion is meant for functionality. It is related to the development of a robust biodiverse ecosystem that is resilient to pests and diseases, and is also economically viable. Minimum area specified for adoption of N+ production methods can be modified by NFO based on the context, in consultation with NPO.
2. Seeds and Planting Materials	
Guiding principles a. *Crop species and varieties cultivated should be adapted to the soil and climatic conditions and be resistant to pests and diseases.* b. *Local farmers' varieties are to be preferred.* c. *The choice of crops and varieties should reflect increasing crop and varietal diversity at the farm level.* d. *Good quality seeds/planting materials to be used.* e. *Seeds and planting materials sourced from own farm and from credible sources are to be preferred.*	
2.1 The seeds/planting material shall be largely free from diseases, insect pests, weed seeds and foreign and inert matter.	
2.2 Seeds and planting materials not treated with chemicals should be used as far as possible.	
2.3 If chemically treated seed and planting materials are used, necessary seed	One option is washing the seeds pre-treated with pesticides in running water and to shade dry them before sowing.

treatment should be followed to remove the pesticides as much as possible.	
2.4 Genetically modified seeds and planting material (GMOs) are not allowed.	The N+ farmer shall keep all the empty packets of seeds bought from outside for inspection.
2.5 Proven and appropriate seed/planting material treatment methods to be adopted, to avoid seed borne disease infestation, based on need.	The seed treatment methods to be adopted for the specific seed and planting materials need to be decided by NFO and are to be informed to the NPO. The NFO should educate the farmers on these methods. No seed treatment with un-allowed inputs shall be done.
2.6 Tissue cultured planting material is allowed.	
3. Diversity in Crop Production	
3.1 Where appropriate, the adoption of N+FFS shall require that sufficient diversity is obtained in time or place in a manner that takes into account pressure from insects, weeds, diseases, and other pests, while maintaining or increasing soil organic matter, fertility, microbial activity, and general soil health. For non-perennial crops, this is normally, but not exclusively, achieved by means of crop rotation.	In the case of annual crops, it is to be ensured that at the very least 1/6th of agricultural area should be leguminous in the crop rotation pattern. If there is any difficulty in practicing this in the N+ farming system, the NFO has to inform the N+3F.
4. Soil Fertility Management	
Guiding principles *a. Recycling of nutrients by returning sufficient quantities of biodegradable material of microbial, plant or animal origin (carbon-based materials) to the soil to increase or at least maintain its fertility and the biological activity within it.* *b. Increasing soil organic matter is essential for good soil health and it will contribute to sustainable fertility management.* *c. Crop residue shall not be burnt and shall be incorporated into the soil or composted.*	

d. Mineral fertilisers to be used in a supplementary role to carbon-based materials like Farmyard Manure, compost, etc., and their application should not be seen as a replacement for nutrient recycling. *e. Preference should be given to time tested and safe traditional/indigenous soil fertility enhancement practices of the region like silt application.* *f. Desired pH levels shall be maintained in the soil by the producer.* g. *Accumulation of heavy metals and other pollutants should be prevented.*	
4.1 The N+ farmer is obliged to ensure soil fertility (by appropriate cultivation measures like inclusion of legumes and deep-rooted plants as part of the crop combination, use of sufficient quantities of compost, farmyard manure and other organic manures, green manuring, green leaf manuring, mulching, cover crops, etc.) and minimise erosion.	Appropriate methods to enhance soil fertility will be identified for each location by NFO in consultation with N+ farmers. These methods will then be promoted by the NFO.
4.2 Contaminant free manure/compost shall be used from a reliable source. City compost/sewage sludge shall not be used.	
4.3 Collection of tank silt is restricted from areas where chemical/dyes factories are located	

4.4 Chemical fertilizers can be used ***judiciously*** to meet the plant nutritional needs following ***appropriate application methods, to avoid nutrient losses and susceptibility for pest attacks.***	Preference to be given to mineral fertilisers which are in their natural composition and not rendered more soluble by chemical treatment to avoid nutrient loss (E.g. Rock phosphate). Appropriate fertilizer application methods like mixing with neem cake, placement and split application need to be adopted.
5. Pest and Disease Management	
Guiding principles *a. Strengthening the resilience of the crops and crop ecosystems to damages caused by pests and diseases is the key to ecological crop protection.* *b. A robust system of pest and disease management takes into consideration the close relationship between the health of soil, crops and agro-ecosystem. It involves carefully*	

designing and managing the whole farm system to achieve health, diversity and vitality of the soils and crops. c. *It relies on preventive and planned strategies rather than reactive strategies.* d. *Pest management shall be guided by understanding the ecological needs of the pests and disrupting the same. The natural enemies of pests and diseases shall be protected and encouraged through proper habitat management of hedges, nesting sites, etc. An ecological equilibrium shall be created to bring about a balance in the pest-predator cycle.* e. *Observing the crop health in a periodical manner and pest surveillance at the individual farm and community levels are essential to decide on the need-based, appropriate pest and disease management measures.* f. *Control measures needs to be taken at the appropriate life stage of the pest and disease for them to be effective and cost efficient.* g. *Preference should be given to time tested and safe traditional/indigenous pest and disease management practices in the region.*	
5.1 Follow practices that encourage natural predators in and around crops like: a. companion planting, intercropping and mixed cropping and b. leaving field margins, hedges, windbreaks, and wildlife corridors uncultivated 5.2 Choose pest and disease resistant crops and varieties and resistant rootstock that are suited to the local agroecosystem. 5.3 Ensure timely sowing by adhering to time tested location specific 'sowing windows' that are less susceptible to pest attacks. 5.4 Follow judicious application of water for irrigation to avoid creating a positive environment for building up of pest population. 5.5 Adopt contextually relevant good land husbandry and hygiene practices to limit the spread of any pest or disease during and after the crop season.	**<u>The NFO, in consultation with N+ farmers, will identify contextually relevant ways to prevent pest infestation for each cropping pattern and farming system, and will promote the same through the N+ package of practices.</u>** **<u>Few proven practices</u>** **Deep summer ploughing:** Summer ploughing by May – June immediately after the first showers exposes the pupae surviving inside the soil. Depth of ploughing should be more than six inches. Exposed pupae will die due to excess heat (or) eaten away by birds. **Community bonfires:** Immediately after the first shower (one-inch rainfall) mass bonfires in the fields have to be organised in the evening between 6 -7 PM to attract adult insect pests (E.g.: Red hairy caterpillar). Attracted adult insects will fall in the fire and die. All farmers in the area should go for bonfires in their fields on the same day.
<u>5.6</u> Use physical methods and traps to reduce the build-up of pest populations.	
5.7 Use bio and other non-synthetic pesticides prepared using plants, animals,	Permitted products for plant pest and disease control listed in Annex 1 were

micro-organisms, and other materials, ***preferably at the farm or in the location,*** in a timely manner to control pest infestation. ***Permitted products for plant pest and disease control are listed in Annex 1.*** ***For preparations sourced from outside, only use those approved by the NFO.***	adopted from the Revised National Programme for Organic Production (NPOP) Standards 2014. If the spraying equipment was previously used in a conventional farm, it should only be used after it has been cleaned thoroughly to avoid contamination. Otherwise, exclusive spraying equipment is to be used in the N+ farm.
5.8 The use of synthetic fungicides, insecticides and other pesticides is prohibited.	
5.9 The use of genetically engineered organisms or products is prohibited.	
5.10 Appropriate measures (buffer zones, non-harvest zones, hedges/trees, non-spraying agreement with neighbours, etc.) must be taken to prevent drift/movement of unwanted chemicals to the N+ plot from conventional neighbouring fields.	Risk of drift is identified in the beginning of the crop season for each N+ plot and timely efforts to prevent the same are taken proactively by the N+ farmer. Buffer zones are areas around the N+ plots which are cultivated by buffer crops or are utilised for non-agricultural purposes like roads. Buffer crops are crops, which are different from the N+ crops. Buffer crops could be annual or perennial and have the height and the bushiness to prevent spray drift contamination. If the same crop is cultivated in the neighbouring farm following a conventional system of production, then a three feet band of N+ crop in the border is considered as a buffer zone, which should be harvested and threshed separately. Buffer zones are not necessary when there is no possibility of spray drift contamination.
6. Weed Management	
Guiding principles	

1) *The best way to control weeds is by carefully designing and managing the whole farm system with a focus on preventing damage by weeds, including good crop rotation design, manure management, well timed soil cultivation and good farm hygiene.* 2) *Reactive measures like use of bio-weedicides and other allowed products have to be followed only when needed.* 3) *Preference should be given to time tested indigenous weed management practices.* 4) *Weed control measures need to be taken at the appropriate life stage of the weed like during emergence and/or before flowering for them to be effective and cost effective.*	
6.1 Adopt some of the following methods, **whichever is contextually relevant**, to control weeds: a. Balanced rotations which include weed-suppressing and weed-susceptible crops b. Sowing cover crops and/or green manures c. Composting animal and plant waste, and aerating slurry to kill weed seeds d. Pre-sowing cultivation like summer ploughing e. Selecting crop varieties that have more vigour and can suppress weeds, and f. Using cleaned seed	**<u>The NFO, in consultation with the N+ farmers, will identify contextually relevant ways of weed management for each cropping pattern and farming system in their location, which involve low cost and less drudgery. These will be promoted through the N+ package of practices.</u>** Appropriate planting methods have to be adopted such that they aid in ease of weeding with tools and small equipment.
6.2 Physical methods for weed management should be given preference including pre-emergence and post-emergence mechanical operations, such as hoeing, harrowing, topping, hand weeding, etc.	
6.3 Mulching, both live mulching and residue-based mulching, to be given preference.	Paddy straw and sugarcane leaves must be used for mulching instead of burning after harvest of the crops.
6.4 Use of plastic mulches is acceptable provided that thick easy-to-remove sheets made of polyethylene, polypropylene or other polycarbonates are used. These shall be removed from the soil after use and shall not	

be burnt on the farmland. The use of polychloride based products is prohibited.	
6.5 Use bio and other non-synthetic weedicides, ***prepared preferably at the farm or in the location.***	
6.6 The use of synthetic weedicides/herbicides is prohibited.	
7. Soil and Water Conservation Standards	
7.1 Clearing of land by burning organic matter (e.g., straw burning) shall be restricted to a minimum.	
7.2 The clearing of primary forest is prohibited.	
7.3 Relevant measures shall be taken to prevent soil erosion.	The NFO, in consultation with N+ farmers, will identify contextually relevant ways to prevent soil erosion in its location and promote the same.
7.4 Excessive exploitation and depletion of water resources shall not be allowed.	
8. Harvesting and Threshing	
8.1 N+ crops should be harvested and threshed separately and not along with conventional crops.	Identify and prepare threshing, winnowing and drying yard well in advance. Minimise movement of domesticated animals inside the drying yard. The machines and equipment used for harvesting and threshing N+ crops should be cleaned before use, if they were used previously in a conventional farm. If it is difficult to clean them, the output of the first few batches to be considered 'conventional' (non-N+) and to be kept separately from that of N+ output.

8.2 The farmer shall take/ keep samples of produce for pesticide residue analysis	A representative sample from each product lot/batch must be kept in a clean bags with adequate labelling.
8.3 The washing and cleaning methods shall be followed as per the recommended quality standards, wherever applicable	Preferably portable water to be used.
8.4 Produce shall be brought to desired moisture level following the recommended practices.	Farmers to be guided about the ideal moisture content for different crops based on practical experience.
9. Storage of N+ Crop Produce by Producer	
9.1 N+ produce should be stored separately from conventional crops by the farmer to avoid co-mingling.	Dedicated storage facility with clear labelling to be used wherever possible. Pallets or raised platform to be used wherever possible.
9.2 The produce shall be stored as per the recommendation so as to maintain the quality of produce	
9.3 Bags and other packing materials used for storing N+ produce should be pesticide free.	Bags to be used for storage has to be made ready in advance by washing and drying.
9.4 Non-chemical pest management measures (like use of leaves of neem and *Vitex negundo*) can be used to manage insect pests and rodents during storage.	
9.5 No synthetic pesticides and synthetic fumigants should be used to control storage pests.	
9.6 Prohibited products shall not be stored in the proximity of the N+ produce.	Besides synthetic pesticides and synthetic fumigants petroleum products, mosquito repellent and chemical used for domesticated animals like Notix must not be kept inside the farm produce storage areas.
10. Record keeping by Producer or Producer Group	

10.1 Mapping of plots allocated for NPM/N+ cultivation will be done indicating the cultivation methods followed in the surrounding fields, risk involved and the buffer areas allocated.	To be done through individual farm diary or group-level farm diary. Records of preventive measures suggested and action taken must be kept at farm level.
10.2 Records of sowing/planting/ transplanting to be maintained.	
10.3 Records of inputs applied at various stages of crop to be maintained.	
10.4 The yield of produce from the verified plot shall be recorded.	Care should be taken to do yield estimation at an appropriate cropping stage.
10.5 All records should be made accessible during audit inspection.	
10.6 Corrective actions for non-conformances shall be undertaken and recorded.	Corrective Action Plan (CAP) and corrective action implementation record must be kept at farm level.
10.7 All farmers shall maintain inventory records of certified produce for each season	
10.8 The records of previous two years shall be maintained	
II. N+ Produce Aggregation Standards	
1. Transportation of N+ Produce	
1.1 Packing materials used for procuring N+ produce should be pesticide free.	***It is recommended that*** fresh bags be used for procurement to avoid contamination. Once the list of approved N+ farmers comes from the Internal Control System (ICS), bags can be given to these farmers to store their produce immediately after harvest.
1.2 Where produce needs to be transported in bulk, N+ produce and conventional	Transport vehicle will be inspected for cleanliness before loading N+ produce.

produce should not be transported together (i.e.) 'part loading' should be avoided. If 'part loading' cannot be avoided, then the N+ products are to be transported in closed packaging or in containers.	
2. Storage of Aggregated N+ Produce	
2.1 All N+ produce should be stored separately from conventional crops to avoid co-mingling.	Plastic or untreated wooden pallets to be used.
2.2 N+ produce should be labelled properly. The label should inform the following: a) Crop and variety, b) Year of harvest, c) Weight, d) Farmer's name and address, and e) Code number of farmers, if any.	Clear identification of N+ products in storage is essential to avoid comingling. To ensure traceability, identification should be made possible by using easily identifiable labelling systems with proper codification (like colour coding).
2.3 Non-chemical pest management measures like use of leaves of neem and *Vitex negundo* can be used to manage insect pests and rodents during storage.	Use of hermetic storage technologies like cocoons with regulated gas composition is recommended for produce that are susceptible for pest attack, like pulses.
2.4 The rodent control traps should be kept at a suitable distance from the crop produce. It should be ensured that the dead rodents and rodent baits are disposed of carefully without contact with the crop produce.	
2.5 Clean the stores regularly to avoid pest infestation and to maintain hygienic environment. Records on planned cleaning schedules and their adherence to be maintained.	
2.6 No synthetic pesticides and synthetic fumigants should be used to control storage pests.	Chemical fumigants like Alluminum phosphide, Methyle bromide, Ethyelene Oxide or UV/gama radiation etc. should not be used.

2.7 Proper inventory records should be maintained to document inward and outward flow of goods from storage areas.	Inventory records are essential for the traceability of the N+ produce.

III. N+ Produce Processing and Handling Standards

Guiding Principles:

N+FFS strives to make available foods that are wholesome, authentic, unadulterated and of high quality.

Note:-

-'wholesome' means preferably whole, minimally processed, contributing to positive health.

-'authentic' means honest/genuine food from a known source, not giving a false impression regarding its nature.

- 'unadulterated' means food made using recipes and methods that minimise the use of additives and processing aids.

- 'high quality' means as good and as nutritious as possible (of its kind).

Any handling and processing of N+ products should be optimised to maintain the quality and integrity of the product and directed towards minimising the development of pests and diseases. Processing and handling of N+ products should be done separately in time or place from handling and processing of conventional products.

1. Specific Principles

The operator must develop an N+ production and handling plan.	A N+ production and handling plan must include: (i) Description of practices and procedures to be performed, including SOP and process flow chart. (ii) List of each substances/inputs used during production, storage and handling indicating its composition, source, locations where it will be used and documentation of commercial availability as applicable. The approved ingredients and additives used in food processing of N+ products can be found at Annex – 2 (A) & (B). (iii) Description of the monitoring practices and procedures followed and maintained to verify the plan is effectively implemented.

	(iv) Risk assessment and mitigation measures. (iv) Description of the record keeping system implemented to comply with the requirements of N+ standards. (v) Description of the management practices and separation measures established to prevent commingling of N+ and non N+ products during parallel processing and handling. (vi) Pollution sources shall be identified and contamination avoided. (vii) Processing and handling of N+ products should be done separately in time or place from handling and processing of non-N+ products. (viii) All products shall be adequately identified through the whole process. (ix) Certification programme shall regulate the means and measures to be allowed. (x) Recommended for decontamination, cleaning or disinfections of all facilities where N+ products are kept, handled, processed or stored.
2. Cleaning and Hygiene	
Guiding Principles *Cleanliness is very essential for NPM processing and storage. Cleaning should be done in a manner to arrest harmful microbial activity, eliminate the chances of chemical contamination and prevent possibilities of physical contamination.*	
Standards **2.1 Cleaning Methods** Allowed substances/techniques and practices for cleaning and hygiene are: a) All detergents, disinfectants, sterilants and terminal sanitizers allowed for use in the food industry, according to manufacturers' instructions. b) Dry cleaning methods where they will not risk N+ product integrity	

c) Ultra-violet radiation to prevent mould growth on the surface of dough and baked goods.	
2.2 Cleaning Procedures	
a) Clean all surfaces that may be in contact with N+ products before the start of production - clean throughout the production process to prevent build up of residues or micro-organisms that could contaminate the product b) Always rinse off remaining disinfectants and sanitizers with water (treated to drinking water standards) to prevent residues left on the surface contaminating the N+ products, and c) Only use alcohol wipes that do not leave any residue after the alcohol has evaporated. d) No use of substances on contact surfaces that could taint or contaminate N+ products.	
2.3 Standards for Storing Cleaning Materials	
a) Label all detergents and sanitizers correctly with the name of the product and safety information b) Store bulk stocks of detergents and sanitizers safely in a marked store to reduce the risk of contamination, and c) Store stocks of detergents and sanitizers in closed containers.	Labelling of storage chemicals is essential since it will enable the workers to understand which chemicals they are using and during verification by external agencies – they can identify conformance of the substances to the standards.
2.4 Cleaning Schedule	
Cleaning schedule should be a written procedure and should be strictly adhered and should include: a) What will be cleaned b) How and how often	Suitable pictorial charts in a local language can be used.

c) What chemicals and equipment you will use, and d) The final rinse of food contact surfaces with drinking standard water before processing NPM products. The cleaning records should be maintained regularly and should be signed by a responsible person which shows that: a) All equipment are cleaned before N+ processing	Equipment made of food grade stainless steel are preferred.
2.5 Bleed Run	
Guiding Principles *Bleed runs are performed to prevent the inadvertent commingling of N+ and non N+ produce during processing. Further bleed runs are also performed to ensure that produce isn't stuck to the machine where it cannot be cleaned. If stuck, these places could become potential breeding grounds for pests.*	
Standards: a) Work out how much N+ product is needed to put through to remove all residue of conventional product b) Procedure should be put in place for how the purging will be done, including how much N+ product will be used and showing how this will remove all conventional material c) Show this at the inspection so that the procedure can be approved and d) Keep full records of all the bleed runs, including the quantities of purge material that have been used.	Bleed run – is the quantity of the N+ product that is run through equipment to flush out any remaining conventional product. The bleed run is then discarded as conventional. Bleed runs are required for cleaning equipment under continuous processing conditions. There are two kinds of processing. a) Continuous processing – like in the case of processing of white sugar from cane sugar. b) Batch processing – like in the case of processing of milk or milling of rice. Bleed runs are applicable in the case of continuous processing.
3. Pest Control	
Guiding Principles: *(i) Pests should be avoided by good manufacturing practices. This includes general cleanliness and hygiene.* *(ii) Treatments with pest regulating agents must thus be regarded as the last resort. (iii) Recommended treatments are physical barriers, sound, ultra-sound, light and UV-light, traps*	

(incl. pheromone traps and static bait traps), temperature control, controlled atmosphere and diatomaceous earth.

Standards (i) A plan for pest prevention and pest control should be developed. (ii) For pest management and control the following measures shall be used in order of priority: • Preventive methods such as disruption, elimination of habitat and access to facilities • Mechanical, physical and biological methods • Pesticidal substances contained in the Appendices of the N+FFS Standards • Other substances used in traps (iii) Irradiation is prohibited. (iv) There shall never be direct or indirect contact between N+ products and prohibited substances. (e.g. pesticides). In case of doubt, it shall be ensured that no residues are present in the N+ product. (v) Persistent or carcinogenic pesticides and disinfectants are not permitted.	• Use of hermetic cocoons after processing. • Bleed runs to prevent processing units from becoming breeding grounds for pests. • Examples of techniques to ward off pests in processing units. • Preference to be given for processing machines that are designed in such a way that no food material accumulates inside the machine where it is difficult to clean.

4. Ingredients

Guiding Principles:

100% of the ingredients used in processing shall be N+ except where an N+ ingredient is not available in sufficient quality or quantity, non-N+ ingredients may be used to a minimum extent only in case of essential technological need or for particular nutritional purpose. Such non-N+ raw material shall not be genetically engineered. The accredited Certification Body may authorize the use of non-N+ raw materials subject to periodic re- evaluation.

Standards (ii) The same ingredient within one product shall not be derived both from an N+ and non-N+ origin. (iii) Preparations of microorganisms and enzymes commonly used in food processing may be used, with the exception of genetically engineered micro-	

organisms and their products. For the production of enzymes and other micro- biological products, the medium shall be composed of N+ ingredients. (iv)Water and salt may be used in N+ products (v) Minerals (including trace elements), vitamins and similar isolated ingredients shall not be used. The certification programme may grant exceptions where use is legally required or where severe dietary, or nutritional deficiency can be demonstrated. (vi) Ethylene gas is permitted for ripening	
5. Processing Methods	
Guiding Principle: Processing methods should be based on mechanical, physical and biological processes. The vital quality of an N+ ingredient shall be maintained throughout each step of its processing methods and shall be chosen to limit the number and quantity of additives and processing aids.	
Standards: i) The following kinds of processes are approved : • Mechanical and physical • Biological • Smoking • Extraction • Precipitation • Filtration (ii) Extraction shall be either with water, ethanol, plant and animal oils, vinegar, carbon dioxide, nitrogen or carboxylic acids. These shall be of food grade quality, appropriate for the purpose (iii)Filtration substances shall not be made of asbestos nor may they be permeated with substances which may negatively affect the product. (iv) Irradiation is not allowed.	• Boric acid usually used in paddy processing is not allowed in N+ paddy. • Maintaining an optimal level of Bran percentage to retain nutritional aspects. • Suitable processing methods that do not result in a loss of nutrition value. • Ensuring the reduction in the presence of Aflatoxins
6. MRL (Maximum Residue Limit) Testing of Produce	

Guiding Principles

To ensure that the pesticide-free quality of the original food material remains intact even after processing, wherein different processing aids and additives are used as part of processing, testing of the resulting produce is taken up to check if the pesticide residues are within the permissible limits. This testing is done at different levels of the supply chain when the product gets transformed and when there is a change in chain of custody.

Standards	Testing of the samples for food safety:
1) Testing of the samples will be done to ensure food safety. The testing will cover pesticide residues, heavy metals and mycotoxins following standard protocols set by the N+3F. 2) The external re-assessment report will be submitted by the inspecting agency to the Certification Committee of the N+3F, which will evaluate the same along with the non-compliance report from the NFO and the food safety test report.	1) The decision to send samples for testing will be taken by the Certification Committee. However, all samples will be stored in the sample storage room at the N+3F. 2) The N+ foods will be tested for pesticide residues as per the Maximum Residual Limits (MRLs) of Insecticides in Organic Foods specified by Jaivik Bharat, Government of India., 3) The foods will be tested for heavy metals and mycotoxins as per the limits specified in the Food Safety and Standards (Contaminants, Toxins and Residues) Regulations, 2011, Government of India. 4) For sampling and testing, protocols set by the N+3F will be followed. 5) Testing of food samples will be done in FSSAI notified laboratories identified by the N+3F.

7. Packaging

Guiding Principles

Biodegradable, recyclable, reusable systems and eco-friendly packaging materials shall be used wherever possible. Material used for packaging shall not contaminate food.

Standards	
Certain products are allowed for use in N+ agriculture for packaging of foodstuffs, however, many of these are restricted for use in N+ production. The details of these products can be found in Annex 3.	"Restricted" means that the conditions and procedures for use shall be set by the accredited certification programme.

The packages shall be closed in such a manner that substitution of the content cannot be achieved without manipulation or damage of the seal. The accredited Certification Body shall approve the packaging material for use.	
8. Labelling	
Guiding Principles Labelling shall convey clear and accurate information on the pesticide-free status of the product.	
8.1 Labelling Requirements **Standards** (i) When the full standards requirements are fulfilled, products shall be sold as "produce of N+FS" or a similar description. (ii) The name and address of the person or company legally responsible for the production or processing of the product shall be mentioned on the label. (iii) Product labels should list processing procedures, which influence the product properties in a way not immediately obvious. All components of additives and processing aids shall be declared. (iv) Additional product information shall be made available on request. (v) Ingredients or products derived from wild production shall be declared as such.	Name and address of the last handler to be indicated.
8.2 Processed Products	
Standards (i) Single ingredient products may be labelled as "N+" when all standard requirements have been met. (ii) Multi ingredient products where not all ingredients, including additives, are of N+ origin may be labelled in the following way (raw material weight):	

a) Where a minimum of 95% of the ingredients are of certified N+ origin, products may be labelled "certified N+" or similar and should carry the logo of the certification programme. b) Where less than 95% but not less than 70% of the ingredients are of certified N+ origin, products may not be called "N+". The term "N+" may be used on the principal display in statements like "made with N+ ingredients" provided there is a clear statement of the proportion of the N+ ingredients. An indication that the product is covered by the certification programme should be used, close to the indication of proportion of N+ ingredients. c) Where less than 70% of the ingredients are of certified N+ origin, the indication that an ingredient is N+ may appear in the ingredients list. Such product may not be termed "N+". (iii) Added water and salt shall not be included in the percentage calculations of N+ ingredients. For aquaculture products the use of iodized salt shall be referred to on the labels. (iv) All raw materials of a multi-ingredient product shall be listed on the product label in order of their weight percentage. It shall be apparent which raw materials are of N+ certified origin and which are not. All additives shall be listed with their full name. (v) If herbs and/or spices constitute less than 2% of the total weight of the product, they may be listed as "spices" or "herbs" without stating the percentage. (vi) N+ products shall not be labelled as GE (genetic engineering) or GM (genetic modification) free in order to avoid potentially misleading claims about the end product. Any reference to genetic engineering on product labels shall be limited to the production method. (vii) The label of a certified N+ product must depict the name and logo of the accredited Certification Body, accreditation number and the Zero Logo.	

(viii) The accredited Certification Body shall verify the labelling requirement and approve the labels of their certified operators before the labels are used.	
9. Storage and Transport	
Guiding Principles *Product integrity should be maintained during storage and transportation of N+ products. N+ Products must be protected at all times from co-mingling with non-N+ products and from contact with materials and substances not permitted for use in N+ farming and handling.*	
Standards (i) N+ products shall be stored at ambient temperature. The following special conditions of storage are permitted: a) Controlled atmosphere b) Cooling c) Freezing d) Drying e) Humidity regulation (ii)Where only part of the unit is certified and other products are non-N+, the N+ products should be stored and handled separately to maintain their identity. (iii) Bulk stores for N+ product should be separate from conventional product stores and clearly labeled to that effect. (iv) Storage areas and transport containers for N+ products should be cleaned using methods and materials permitted in N+ production. Measures should be taken to prevent possible contamination from any pesticide or other treatment not listed in Annex – 2 of Appendix 1. v) Transport N+ products in closed packaging or containers vi) Transport N+ products in vehicles that are suitable for them, and vii) Make sure the loading equipment and the vehicles are clean and have been cleaned only	

with substances of Appendix 1 – List of substances used for pest control. viii) Transport chilled or frozen N+ products only in vehicles that have systems to ensure the temperature stays correct throughout the journey, and - record results of all the checks you make.	
III. Wild Harvesting	
1. Harvesting any species defined as 'critically endangered' in the IUCN red list (The World Conservation Union) (www.iucn.org) is not allowed. 2. Products can only be approved as 'N+' if derived from a designated area for collection, clearly depicted in the map of the authorized area of collection by the forest department or state department, which is subject to inspection. ***3. Wild harvested products shall only be certified 'N+' if derived from a stable and sustainable growing environment. Harvesting or gathering the product shall not exceed the sustainable yield of the ecosystem or threaten the existence of plant or animal species.*** ***4. The areas under wild harvesting must:*** • ***Not be sprayed with any synthetic chemical pesticides*** • ***Be at least 10 metres distance from conventional farms or areas sprayed with unallowed products*** • ***Be at least 50 metres from highways and railroads and*** • ***Be at a suitable distance from any other source of pollution or contamination***	Wild harvested products are those products which are harvested from wild areas. Wild areas principally fall into the following categories: 1 From forests – primary and secondary forests 2 From social forestry systems on community lands 3 From abandoned orchards, which have not been cultivated for the past 10 years 4 From community lands, which have not been farmed for the past 10 years The need to annually inspect wild harvested products is to verify the traceability of these products back to the areas they were sourced from and also to see if all post harvesting methods and processes are in accordance with the N+FFS Standards.
IV. Reciprocity with NPOP Standards	
N+FFS Standards will be considered ***equivalent*** to NPOP Standards. Products certified 'Organic'	This is because all the farms certified as 'Organic' or as 'Under conversion to

or 'Under conversion to organic' by any Accredited Certification Agency as per NPOP Standards will be accepted as an N+ product.	organic' comply with the N+FFS Standards. For these farms, verification of the required organic certification documents will be taken up.

V. N+FFS Guarantee Systems (NGS)

This is a guarantee system for a farmers' organisation or a development agency facilitating adoption of N+FFS approach at the grassroots (hereafter called N+FFS Facilitating Organisation (NFO)). The compliance to N+FFS Standards is guaranteed by the NFO by working closely with participating N+ farmers and N+ Farmers Groups (NFGs). Such a collective guarantee is re-assessed by an external agency; either the Nature-Positive Farming and Wholesome Foods Foundation (N+3F; the national level support organisation with the mandate to promote N+FFS) or another agency duly authorized by N+3F, to assure the public at large about the effectiveness of the compliance management system. NGS involves the following interventions:

1. Setting up Internal Control Systems (ICS) by the NFO, which in turn involves, (i) preparation of ICS Manual, (ii) evolving internal N+FFS standards and (iii) risk assessment
2. Implementing the ICS, which in turn involves,
    a. Pledge by N+ farmers
    b. Peer review/internal assessment system of compliance to the N+FFS Standards and
    c. Corrective actions to address non-compliance in a timely manner
3. External re-assessment of the internal assessment system
4. Testing the N+ produce in an accredited lab following FSSAI protocols to know the presence of pesticide residues.
5. N+ Certification
6. Use of N+ logo

Pre-requisites of NGS

1. All the farmers participating in N+FFS program should be organized into or be a member of an existing functional group like produce group, SHGs, etc., commonly designated as N+ Farmers Group (NFG).
2. The membership of these NFGs should have small farmers (i.e. farmers with land holding below 4 hectares or 10 acres) mobilized based on solidarity, mutual familiarity, proximity of their land holdings, and ease of face-to-face meetings.
3. These groups should agree to be *formally guided* by an N+FFS Facilitating Organisation (NFO)-which is a registered farmers' organisation formed by federating

NFGs-or by a development agency like an NGO.

4. This guiding agency or the NFO will be responsible for i) educating the participating farmers and NFGs on N+FFS Standards developed by the N+3F, ii) improvising some of the N+FFS standards based on the contextual requirements in consent with N+3F, iii) capacity building of farmers on adopting contextually relevant N+ methods in their farm, iv) aggregation, storage, cleaning, grading, processing, and marketing of N+ produce and v) running the N+FFS Programme, including the ICS for N+FFS.
5. NFO will be accredited by the NPO. As part of this, NFO needs to have an agreement with the N+3F for guidance and support.

Standards for entry of the farmers into the N+ Farmers Group (NFG)

1) All the farmers who wish to practice N+ production methods need to apply to the NFG and NFO at least 15 days before the cropping season. This application will have information on location of the farm and its area, the N+ and conventional crops planned, their area, commitment to follow N+FFS approach and adhere to the modalities of NFG & NFO, including participating in the training sessions and meetings, co-operating for field inspection and payment for services rendered. ***This application to join the N+FFS Programme needs to be renewed every cropping season.*** ***2) The NFG needs to approve the application from the interested farmer based on the N+FFS Standards in place and enrol her/him in the group.*** ***3) The NFG needs to make an Enrolled Farmers List (EFL) and submit it to the NFO every cropping season.*** The EFL will provide details of the location of each farmer, farmerwise and cropwise area and yield estimates for N+ production.	NFO will consolidate the EFL received from all the NFGs supported by it at the location and organisation level and will share it with the N+3F.

Standards for capacity building of N+ farmers and NFGs

1) Each NFG should undergo a training and extension programme, which will build the capacity of N+ farmers and the NFG to adopt N+ practices and standards.	N+ farmers face many challenges in N+ production, including that of emerging crop pests and diseases like Fall armyworm. There should be a continuous process of capacity building and delivery of advisory

2) Prescriptive action(s) to be taken for non-compliance based on the degree to which it compromises N+FFS Standards will be given by the NFO to each NFG during the training.	services to the farmers to enable them to adopt N+ practices effectively. Specific efforts are needed to facilitate cross learning between the farmers.
Standards for the Farmer's Pledge	
1) Every farmer enrolling in the N+FFS Programme must take a pledge in the NFG meeting following the process specified by NFO. ***2) The content of farmer's pledge should contain all the relevant internal N+FFS Standards developed by the NFO based on the generic N+FFS Standards developed by the N+3F.*** 3) The pledge should be in a language which can be understood by the farmers in the group. 4) Every member in the NFG should have a copy of the farmer's pledge.	The farmer's pledge is a declaration of the promises by an N+ farmer regarding the farming practices she/he intends to adopt in her/his farm. It is an important document, as it serves as the proof of commitment of the farmer to the concept of N+FFS. The process of taking a farmer's pledge is equally important as its content.
Standards for Peer Review / Internal Assessment System	
1) ***100 % of all farms will be audited by the NFO every cropping season through a defined peer review/ Internal Assessment System procedure involving regular meetings and farm visits in coordination with each NFG.*** 2) The farmer shall offer all the needed support for inspection of her/his farm by fellow farmers, N+FFS Programme staff and agencies deployed by the NFO and share the necessary details. 3) Based on these measures, a list of farmers who have complied N+FFS Standards will be identified by the NFG. NFG will prepare an Approved Farmers List (AFL) by the end of every crop season just before harvest and share it with the NFO. 4) The NFO will review the AFL submitted by NFG and will approve it. 5) The records of peer review/internal assessment	100% internal assessment of all N+ farms is essential since the risk component in N+ systems of production is very high as split production is allowed and there is no conversion period. The NGS should ensure that possible risks should be avoided at all stages, including production, harvesting, threshing, storage, transportation, and processing.

will be available for external re-assessment.	
Standards to address non-compliance issues and for corrective actions	
1) If there is any deviation from or non-compliance with the N+FFS Standards, the farmer should inform the N+ group and NFO staff and should not sell the harvested crop as 'N+ produce.' ***2) All the non-compliances need to be properly recorded in the internal and external assessment process.*** ***3) Appropriate action needs to be taken for non-compliance by the NFG in consultation with the NFO.*** ***4) Major non-compliances observed in every peer review/ internal assessment cycle for every crop by NFG across the location/Programme must be compiled, summarized, and informed by the NFO to the N+3F.***	Non-compliances offer a window to understand the constraints faced by the N+ farmers and have to be looked at with necessary perspective. The potential to improve the N+FFS Programme operations and the N+FFS Standards by understanding the pattern of non-compliances needs to be capitalized in full by the NFO and the N+3F.
Standards for external re-assessment	
3) The N+FFS Programme of the NFO will be externally re-assessed for every cropping cycle by an agency authorized by the N+3F. A sample of the farmers will be re-assessed along with a complete evaluation of the peer review/internal assessment system followed by the NFO. 4) Samples will be drawn at appropriate points in the product chain during external re-assessment following standard protocols set by the N+3F. 5) Testing of the samples will be done to ensure food safety. The testing will cover pesticide residues, heavy metals and mycotoxins following standard protocols set by the N+3F. 6) The external re-assessment report will be submitted by the inspecting agency to the Certification Committee of the N+3F, which will	The purpose of external re-assessment is to check the effectiveness and the capability of the NFO to 1) Verify compliance of every farmer in the Approved Farmers List (AFL) to the N+FFS Standards 2) Identify non-compliance and suggest suitable actions 3) Effectively assess whether appropriate corrective actions are implemented properly by NFGs 4) Ensure transparency between the NFO and N+3F regarding non-compliance issues faced by the farmers Testing of the samples for food safety: 6) The decision to send samples for testing will be taken by the Certification Committee. However, all samples will be stored in the sample storage room at

evaluate the same along with the non-compliance report from the NFO and the food safety test report. ***7) The N+3F will issue the N+ Certificate to the NFO on its compliance with all the N+FFS Standards for the concerned year.***	the N+3F. 7) The N+ foods will be tested for pesticide residues as per the Maximum Residual Limits (MRLs) of Insecticides in Organic Foods specified by Jaivik Bharat, Government of India., 8) The foods will be tested for heavy metals and mycotoxins as per the limits specified in the Food Safety and Standards (Contaminants, Toxins and Residues) Regulations, 2011, Government of India. 9) For sampling and testing, protocols set by the N+3F will be followed. 10) Testing of food samples will be done in FSSAI notified laboratories identified by the N+3F.
VI. Rules for the Use of Zero Logo	
All products conforming to N+FFS Standards can be labelled with the "Zero Logo" as below:  The logo can be applied to those products which proved conformance through the inspection program and the tests. . The logo should be a perfect square. The colour should be purple and there can be no variation in the colour scheme. The application of the logo should be verified by the N+3F team before it is printed on labels or on packages.	Zero Logo has to be applied to identify and differentiate N+ products from other conventional products. This logo can be applied to packaged products and also to the labels on the bulk packing.
VII. Overriding Rule	

There are groups of farmers and tribal communities which conform to the N+FFS Standards but do not follow documentation of all the processes required to prove during an external assessment. Under such circumstances, an appropriate method of external assessment will be followed by the N+3F to assess such farmer's/tribal groups, and if found compliant, then such groups can be approved as 'N+ compliant groups' to supply N+ products.	Concerned tribal communities may avail the support of external agencies for documentation and record keeping.

Annex 1:

List of Products Allowed for Plant Pest and Disease Management

Certain products are allowed for use in N+ agriculture to control pests and diseases in plant production. Such products should only be used when absolutely necessary and should be chosen taking the environmental impact into consideration.

Many of these products are restricted for use in N+ production. In this annex "restricted" means that the need and the procedures for use shall be subject to conditions.

Inputs	Condition for use
Substances from plant and animal origin	
Azadiracta indica (neem preparations)	Permitted
Neem oil	Restricted
Preparation of rotenone from *Derris elliptica, Lonchocarpus, Thephrosia spp.*	Restricted
Gelatine	Permitted
Propolis	Restricted
Plant based extracts – garlic, pongamia, etc.	Permitted
Preparation on basis of pyrethrins extracted from *Chrysanthemum cinerariifolium*, containing possibly a synergist *Pyrethrum cinerariifolium*	Restricted
Preparation from *Quassia amara*	Restricted
Release of parasite predators of insect pests	Restricted
Preparation from *Ryania species*	Restricted
Tobacco tea	Prohibited
Lecithin	Restricted
Casein	Permitted

Sea weeds, seaweed meal, seaweed extracts, sea salt and salty water	Restricted
Extract from mushroom (Shitake fungus)	Permitted
Extract from Chlorella	Permitted
Fermented product from Aspergillus	Restricted
Natural acids (vinegar)	Restricted
Minerals	
Chloride of lime/soda	Restricted
Clay (e.g., bentonite, perlite, vermiculite, zeolite)	Permitted
Copper salts / inorganic salts (Bordeaux mix, copper hydroxide, copper oxychloride) used as a fungicide depending upon the crop and under the supervision of accredited Certification Body	Restricted
Mineral powders e.g.: stone meal	Prohibited
Diatomaceous earth	Restricted
Light mineral oils	Restricted
Permanganate of potash	Restricted
Lime sulphur (calcium polysulphide)	Restricted
Silicates, clay (Bentonite)	Restricted
Sodium bicarbonate	Restricted
Sulphur (as a fungicide, acaricide, repellent)	Restricted
Microorganism used for biological pest control	
Viral preparation (e.g., Granulosis virus, Nuclear Polyhedrosis Virus etc.	Permitted
Fungal preparations (*Trichoderma spp*.)	Permitted
Bacterial preparations (*Bacillus spp)*	Permitted

Parasites, Predators, and sterilized insects	Permitted
Others	
Carbon dioxide and nitrogen gas	Restricted
Soft soap (potassium soap)	Permitted
Ethyl alcohol	Prohibited
Homeopathic and Ayurvedic preparations	Permitted
Herbal and biodynamic preparations	Permitted
Traps	
Physical methods (Chromatic traps, Mechanical traps, sticky traps, and Pheromones	Permitted

Source: Revised National Programme for Organic Production (NPOP) Standards, Government of India 2014.

Annex 2A:

Food Additives Including Carriers for Use in Production of Processed N+ Food

International Numbering System	Product	Preparation of food products		Conditions for use
		Plant origin	Animal origin	
INS 170	Calcium carbonate	√	√	Not for use for colouring/calcium enrichment of products
INS 220	Sulphur dioxide	√	√	For fruit wines without added sugar
INS 270	Lactic acid		√	For concentrated fruit / veg. juice & fermented veg. products
INS 296	Malic acid	√		
INS 290	Carbon dioxide	√	√	
INS 300	Ascorbic acid	√	√	For meat products
INS 306	Tocopheroles, mixed, natural concentrates	√	√	Antioxidant for fats and Oils
INS 322	Lecithin	√	√	For milk products (to be obtained without use of bleaches and organic solvents)
325	Sodium lactate		√	For milk based and meat products
INS 330	Citric acid	√	√	For concentrated fruit/veg. Jam, fermented veg. product
INS 331	Sodium citrate	√		
INS 333	Calcium citrate	√		
INS 334	Tartaric acid	√		

INS 335	Sodium tartarate	√		
INS 336	Potassium tartarate	√		
INS 341	Mono calcium phosphate	√		For raising flour only
INS 400	Alginic acid	√	√	For milk based products
INS 401	Sodium alginate	√	√	For milk based products
INS 402	Potassium alginate	√	√	For milk based products
INS 406	Agar	√	√	For milk based and meat products
INS 407	Carrageenan	√	√	For milk products
INS 410	Locust bean gum	√	√	
INS 412	Guar gum	√	√	
INS 414	Arabic gum	√	√	
INS 415	Xanthum gum	√	√	
INS 422	Glycerol	√		For use in plant extracts
INS 440	Pectin	√	√	For milk based products
INS 464	Hydroxy propyl methyl Cellulase	√		For encapsulation material for capsules
INS 500	Sodium carbonate	√	√	For milk product Substances
INS 501	Potassium carbonate	√		For drying of grape Resins
INS 503	Ammonium carbonate	√		
INS 504	Magnesium carbonate	√		
INS 509	Calcium chloride	√	√	For milk coagulation
INS 516	Calcium sulphate	√		Restricted; For use only as carrier
INS 524	Sodium hydroxide	√		
INS 551	Silicon dioxide	√		Anticaking agent for

				herbs & spices
INS 553	Talc	√		Coating agent for meat Products
INS 938	Argon	√	√	
INS 939	Helium	√	√	
INS 941	Nitrogen	√	√	
INS 948	Oxygen	√	√	

Annex 2B:

Processing Aids and Other Products for Use for Processing of Ingredients of Agricultural Origin from N+ Production

Product	Preparation of food products of		Conditions for use
	Plant origin	Animal origin	
Water	√	√	Potable water standards
Calcium chloride	√		Coagulation agent
Calcium carbonate	√		Coagulation agent
Calcium hydroxide	√		
Calcium sulphate	√		Coagulation agent
Magnesium chloride	√		Coagulation agent
Potassium carbonate	√		Drying of grapes
Sodium carbonate	√		Sugar production
Lactic acid		√	For regulation of pH of brine bath in cheese Production
Citric acid	√	√	For regulation of pH of brine bath in cheese production; oil production and hydrolysis of starch
Sodium hydroxide	√		Sugar production, oil production from rape seed
Sulphuric acid	√	√	Gelatin production Sugar production
Hydrochloric acid		√	Gelatin production
Ammonium hydroxide		√	Gelatin production
Hydrogen peroxide		√	Gelatin production
Carbon dioxide	√	√	

Nitrogen	√	√	
Ethanol	√	√	Solvent
Tannic acid	√		Filtration aid
Egg white albumin	√		
Casein	√		
Gelatin	√		
Isinglass	√		
Vegetable oils	√	√	Greasing, releasing or antifoaming agent
Silicon dioxide gel	√		
Activated carbon	√		
Talc	√		In compliance with the specific purity criteria for food additives
Kaoline	√	√	
Cellulose	√	√	Gelatin production
Diatomaceous earth	√	√	Gelatin production
Perlite	√	√	Gelatin production
Hazel nut shells	√		
Rice meal	√		
Bee wax	√		Releasing agent

Flavouring Agents

(i) Volatile (essential) oils produced by means of solvents such as oil, water, ethanol, carbon dioxide and mechanical and physical processes

(ii) Natural smoke flavour

(iii) Use of natural flavouring preparations should also be approved by the Certification Body

Preparations of Micro-organisms

(i) Preparations of micro-organisms accepted for use in food processing

(ii) Genetically modified microorganisms are excluded

(iii) Bakers yeast produced without bleaches and organic solvents

Ingredients

(i) Drinking water

(ii) Salt

(iii) Minerals (including trace elements) and vitamins where their use is legally required or where severe dietary or nutritional deficiency can be demonstrated.

Annex 3:

Approved Products for Packaging of N+ Foods

Certain products are allowed for use in N+ agriculture for packaging of foodstuffs, however, many of these are restricted for use in N+ production. In this annex "restricted" means that the conditions and procedures for use shall be set by the accredited certification programme.

Use of plastics for packaging of N+ foods

S. No.	Products	Limitation
1.	4,4'-Bis(2-benzoxazolyl)stilbene	Restricted
2.	9,9-Bis(methoxymethyl)fluorine	Restricted
3.	Carbonic acid, copper salt	
4.	Diethyleneglycol	Restricted
5.	2-(4,6-Diphenyl-1,3,5-triazin-2-yl)-5-(hexyloxy)phenol	
6.	Ethylenediaminetetraacetic acid, copper salt	Restricted
7.	2-(2-Hydroxy-3,5-di-tert-butyl-phenyl-5-chlorobenzotriazole	
8.	2-Methyl-4-isothiazolin-3-one	Restricted
9.	Phosphoric acid, trichlorocthylester	
10.	Polyesters of 1,2 propanediol and/or 1,3-and 1, 4 butanediol and/or polypropyleneglycol with adipic acid, also end-capped with acetic acid or fatty acids C10-C18 or n-octanol and/or n-decanol	Restricted
11.	1,1,1-Trimethylolpropane	
12.	3-hydroxybutanoic acid 3-hydro xypentanoic acid, copolymer	Restricted

Permissible Packaging Material for aquaculture

- Paper, wax paper, paper coated with PE
- Polyethylene (PE), polypropylene (PP), polyacrylic, polyamide (PA) (single compound or as coating)
- Polystyrene cold boxes with PE coating film or inside bag
- Textile packaging (tested for harmful substances)