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Terms of Reference for identification of potential vendors for supply of Fortified Rice Kernels (FRK) at the delivery destinations– Uttarakhand

Project details:

Aligned to the vision of the Government of India and further to the announcement of the Hon'ble Prime Minister on 15th August 2021, fortified rice is being mainstreamed across all food-based safety nets schemes in the country including Uttarakhand, in a phased manner. This year, the state government plans to cover all 13 districts (including 02 Aspirational Districts i.e. Haridwar and U.S.Nagar) under NFSA (TPDS) &MDM. Fortified rice is already being distributed under PMPOSHAN scheme and TPDS in 02 Aspirational districts (Haridwar & U.S.Nagar).

Objectives: Empanelment of FRK manufacturers for supply of FRK to all rice mills in the Kharif Marketing Season (KMS) 2022-23 in all 06 paddy procuring districts at the delivery destinations.

Project Location: All 06 paddy procuring districts with rice mills in the state of Uttarakhand

Quantity of Rice to be fortified: 100% of the rice to be milled should be fortified. The tentative requirement of FRK for the listed 06 districts is 6030 MT as per the tentative target of 9.00LMT decided by GoI for state of Uttarakhand. The requirement of FRK may vary with the change in procurement quantity. The tentative delivery schedule is given as under.

Name of the Districts	Requirement of FRK in 'MT'(Approx)	Timeline for Delivery FRK Consignments (Tentative)
Dehradun	85.0 MT	Jan-2023 to Apr-2023
Haridwar	395.0 MT	Jan-2023 to Apr-2023
Pauri Garhwal	15.0 MT	Jan-2023 to Apr-2023
U. S Nagar	5020.0 MT	Jan-2023 to Apr-2023
Nainital	430.0 MT	Jan-2023 to Apr-2023
Champawat	85.0MT	Jan-2023 to Apr-2023
Total	6030 MT	

Through these Terms of Reference (ToR), the Department of Food, Civil Supplies & Consumer Affairs, UK intends to empanel FRK suppliers for procurement of FRK by the rice millers at the delivery destinations.

Expectations from FRK suppliers:

- 1. Production and delivery:** The empaneled FRK manufacturers/suppliers will produce and deliver FRK as per quantity allotted and the delivery schedule shared by Food, Civil Supplies & Consumer Affairs, UK to the registered Rice Miller.
- 2. Delivery Address:** Government empaneled Rice Mills identified for milling across all the 06 paddy procuring districts of Uttarakhand. (Details to be shared at a later date)
- 3. Packing instructions:** FRK shall be delivered in appropriately labeled **20 Kg woven HDPE bags with an inner LDPE lining**. The packaging material to comply with the specifications given below:

Outer Packaging Material: Woven HDPE Outer bag: 80g Inner Liner Packaging Material: LDPE Liner Thickness: 250-gauge Packaging Size: 20 kg The bags should be properly stitched by double thread stitching

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4. Marking instructions: The markings on the bag should mention the below as per BIS standards. The draft label shall be shared with State Food Department well in advance for approval.

- I. Name and address of the manufacturer.
- II. Date of Packaging.
- III. Lot/Batch number.
- IV. Net weight/quantity.
- V. List and levels of micronutrients and their chemical form.
- VI. Storage instruction.
- VII. Instruction for usage (intended level of blending 1:100).
- VIII. Not for retail sale.
- IX. Best before.....month.....year
- X. Any other information required under the *Legal Metrology (Packaged Commodities) Rules, 2011, the Food Safety and Standards (Labelling & Display) Regulations, 2020*
- XI. Name of the Product
- XII. Vegetarian logo
- XIII. It should mention in bold 'not for direct human consumption'.
- XIV. It should mention 'not to be construed as substitute for rice or rice flour'.

5. FSSAI & BIS Standards:

The Manufacturers should comply with FSSAI standards released on 23rd June 2022. Annexure 1 of draft Food Safety and Standards (Food Products Standards & food Additives) Amendment regulations, 2022 with respect to Fortified Rice Kernels (FRK).

The standard set of Bureau of Indian Standards for premix, Fortified Rice Kernels and FRK manufacturing machine should be adhered to. The standards need to be adhered by empaneled FRK manufacturers.

IS 17781: 2021 - VITAMIN MINERAL PREMIX FOR MANUFACTURING FORTIFIED RICE KERNELS-SPECIFICATION

IS 17782: 2021 - FORTIFIED RICE KERNELS-SPECIFICATION

IS 17853: 2022 EQUIPMENT FOR MANUFACTURE OF FORTIFIED RICE KERNEL – SPECIFICATION

Given below are the links for BIS standards which FRK manufacturer should refer to

https://standardsbis.bsbedge.com/BIS_SearchStandard.aspx?Standard Number=IS%2017853&id=35289

https://standardsbis.bsbedge.com/BIS_SearchStandard.aspx?Standard Number=IS+17782&id=0

https://standardsbis.bsbedge.com/BIS_SearchStandard.aspx?Standard Number=IS+17781&id=0

6. Production of FRK: The FRK shall be manufactured using extrusion technology which involves dry mixing of rice flour & premix followed by addition of water. This blend is passed through a twin - screw extruder which has heating zones, with different temperatures to produce kernels similar in shape and size of rice. These kernels are dried in multilayer dryer and passed through cooling conveyor and packaged.

CoA (Certificate of Analysis) for each batch of premix used in the manufacturing of FRKs should be shared with the State PMU/ Region level committee headed by RFC for approval. CoA must contain both micronutrient and microbiological analysis. FRK manufacturer should ensure that the CoA of the premix has been validated by the State PMU/ Regional Committee before starting the production of FRK.

Standards of fortification: FRK to contain the following micronutrients: (i) Iron , (ii) Vitamin B12, (iii) Folic Acid at the levels as specified by FSSAI.








Table 1: Standards of fortification per Kg of fortified rice with micronutrients as specified by FSSAI

Sl no.	Nutrient to be added mandatorily	Fortificants level for 1:100 blending ratio
1	Iron- Micronized Ferric pyrophosphate (particle size 1 – 3 microns)	2800 – 4250 mg/Kg
2	Folic Acid - Folic acid	7500 – 12500 microgram/Kg
3	Vitamin B12- Cyanocobalamine or Hydroxycobalamine	75 – 125 microgram/Kg

To ascertain above levels, given below are the finished product specifications:

Table 2: Fortified rice kernels specifications:

Fortified rice kernels (FRKs) must conform to the following physico-chemical requirements

	Requirement	Limit
1	Moisture % by mass, not more than	12%
2	Broken rice kernels, percent by mass, not more than	1%
3	Foreign matter, percent by mass, max	0.001%
4	Damaged kernels, including heat damaged	Absent
5	Discolored grains	Absent
6	Chalky grains	Absent
7	Admixture with any other grains, including non-fortified rice	Absent
8	Uric acid (mg/kg) on mass basis, not more than	100
9	Yeast and Mold count, (cfu/g)	1×10^2
10	Aerobic plate count, (cfu/g)	1×10^4

* Due consideration should be given to storage and cooking losses.

7. Quality assurance and control: A Certificate of Analysis (CoA) for the manufactured FRK covering the micronutrient levels and microbiological levels from an external FSSAI notified NABL accredited laboratory should be shared with the State PMU/Regional level committee at least a week in advance of the date of dispatch of the FRK to ensure a detailed review and feedback. The Supplier is also expected to share with State PMU/Regional level committee a 500g sample of the FRK from the consignment under production before its dispatch.

8. Shelf life: The FRK produced should have a shelf life of minimum 12 months when the consignment is received at the delivery location.

9. Food safety and risk assessment at manufacturing premises: The manufacturers must be FSSAI licensed / registered under category 99.5 and should have a valid license for production of FRKs. For compliance with food safety standards, the processor must be able to demonstrate by principle and practice the adoption, implementation and recording of:

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- Good Manufacturing Practice
- Hazard Analysis Critical Control Point program
- Quality Management System

In this context an appointed Official of State PMU/ Regional level Committee /Food Safety Officer is entitled to visit the FRK Manufacturing Unit without prior notice during any period when the product is being manufactured to check that the GMP and HACCP systems are in place. The Inspection team may request to see:

- Records (i.e. names of Production and Quality Assurance in charge)
- Records of in process control parameters such as temperature inside the extruder in all three zones, dryer and cooler. Moisture content in Raw rice flour, Rice flour + Premix, just extruded kernel, Kernel after drying and Kernel before packaging.
- Record on FRK testing reports on cooking characteristics, time & Temperature, Length & width.
- Procedures (eg , cleaning , personnel hygiene, HACCP, sampling and analysis)
- Work Instructions (eg , process instructions , cleaning instructions)
- Quality manual for the FRK manufacturing process.
- Records on Pest control treatment.
- Test Report on water analysis.
- Analysis report on micronutrients tested from an external 3rd party Laboratory

FRK manufacturer is expected to share the following documents with the State PMU/Regional level committee for review:

- I. Process for manufacture of FRK
- II. Cleaning of plant & equipment
- III. Testing protocols for in process and finished goods
- IV. Certificate of Analysis (CoA) for each batch of premix received for production of the FRK
- V. Extrusion Temperature.
- VI. Dryer Temperature.
- VII. Kernel length, width and density
- VIII. Cooking quality
- IX. Deviation & Corrective Action Records
- X. Photographs of the production unit taken at strategic points during production, e.g. interim storage area for FRKs, dryer, extruder machine, blender for mixing rice flour and premix, pulverizer, source of potable water etc

10. Specifications for Milled Rice (Broken): Broken rice to comply with the following specifications;

Rice flour: The FRK manufacturer should ensure that the rice flour used for FRK production should comply to 24(a), Rice flour for preparation of Fortified Rice Kernels of Annexure 1 of draft Food Safety and Standards (Food Product standards and food additives) Amendment Regulations, 2022.

Product	Parameter	Specification	Reference
Rice Flour	Particle Size % (not less than)	90% passes through 60 mesh	IS 1155
	Moisture % by mass (not more than)	14.0	ISO 712-2009 /IS 4333 (Part 2),
	Acid Insoluble ash % by mass (on dry basis), not more than	0.15	IS 1155
	Alcoholic Acidity, % not more than	0.18	IS 1155
	Uric Acid, mg/kg, not more than	100	IS 4333(Part 5)
	Yeast & mould count (cfu/g)	100	AOAC 997.02, IS:5403:1999 (Reaff.2013)/ICC no. 146 , AACC 42-50
	Aerobic Plate count (cfu/g)	10,000	AOAC 966.23/IS:5402-2002/ICC no. 125 , AACC 42-11

11. Specifications for Potable / Drinking Water: The potable drinking water to comply with IS 10500:2012 standards. The water should be tested at least once in quarter and reports should be kept in the records.

Recommendations: Fortified rice shall comply, in terms of raw materials, composition of manufacture, except when specified otherwise in this contract with the following guidelines or standards:

- I. (5) Rice , (1) Food Grains meant for human consumption , Regulation 2.4.6 Food Grains , Part 2.4 Cereal & Cereal Products, Food Safety and Standards (FOOD PRODUCTS STANDARDS AND FOOD ADDITIVES) Regulations (2011)
- II. Codex Standard for Rice (CODEX STAN 198-1995)
- III. Recommended International Code of Practice: General Principles of Food Hygiene CAC / RCP 1-1969 Rev 4-2003 including annex " Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its application"
- IV. General Principles for addition of essential nutrients to foods: CAC / GL 09 -1987 (amended 1989, 1991) of the Codex Alimentarius

12. Other Terms & Conditions

- I. The applicants should submit a mandatory non Refundable **Empanelment Fee** of **Rs.20,000/- (Twenty thousand only)** in shape of a demand draft drawn in favor of '**Commissioner, Food, Civil Supplies & Consumer Affairs, payable at Dehradun** along with all the required documents.
- II. The empanelled successful FRK-Suppliers need to submit Work Performance Guarantee of 1.5% of the total work order as per quantity allotted (FRK) in shape of a demand draft drawn in favor of '**Commissioner, Food, Civil Supplies & Consumer Affairs, payable at Dehradun** along with the documents.
- III. The DoFCS&CA reserves the right to empanel sufficient number of FRK suppliers and allot the adequate quantity for above mentioned destinations.
- IV. In case any empaneled FRK-supplier found defaulter, the DOFCS&CA reserves the right to seize the work performance guarantee.
- V. The DoFCS&CA reserves the right, without giving any reason, to accept or to reject all or any applications.
- VI. The time period for empanelment can be extended to next KMS season(s) with mutual consent of the FRK Manufacturers and DOFCS&CA.

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Other considerations:

The FRK manufacturer shall also ensure that each consignment of FRK matches with Custom Milled Rice (CMR) produced in the mill in terms of length, width, color, density and cooking qualities. To help the manufacturer with that, samples of milled rice will be shared in advance by the concerned rice millers at least 10 days in advance along with the production schedule.

M/s..... Fortified Rice Kernels SUPPLIERS SHRI Designation Know Oath.

1. I hereby declare that my firm is not blacklisted and debarred by the Government of India or any state of the country; neither any legal or Administrative proceedings have taken place against my firm.
2. If the quality of the fortified rice kernels provided by my firm is contrary to the standards prescribed by the Government of India, if the rice supplied by the rice mills in the State / Food Corporation of India Godown is confirmed to be defective due to poor quality of FRK, in any case, I will undertake the disposal of rice declared defective by my firm as agreed to by the Government of India or the State Government. The loss to the rice millers, Government of India or the State Government will be compensated by me and my firm.

**Date
Place**

Signature of the Applicant





