

# A Value chain on Ginger and Ginger Products

## Environmental and Social Safeguards Management

### A. Basic Information

#### 1. Project statistics:

Title of the Project	<b>"A Value chain on Ginger and Ginger Products"</b>
Component code	<b>02</b>
Name of Consortium Leader	Prof. D.P. Ray, Vice Chancellor, OUAT, Bhubaneswar
Name of CPI	<b>Dr H.N. Atibudhi</b>
Name of CoPI	<b>Dr S.K.Dash</b>
Institution	Orissa University of Agriculture and Technology (OUAT)
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Consortium partners	1. CTRAN Consulting Pvt.Ltd., Bhubaneswar 2. Natural Remedies Private Ltd, Bangalore 3. KASAM, Kandhamal 4. IAEET, Koraput

2. Date of Start : 15<sup>th</sup> April 2009
3. Planned duration : 3.3 years
4. Project cost : Rs. 709.6091 lakh

#### 5. Project objectives:

- I. Augmentation in production of suitable Ginger varieties (for value addition) in clusters with improved package of practices.
- II. Improvement in post harvest technology of Ginger to minimise post harvest losses and develop value added products.
- III. Improvement in value chain of Ginger for improved economic return to growers through remunerative market of branded and certified ginger and ginger based products.
- IV. Establishment / linking producer's company/Organisations for better market access and enhanced bargaining power of the producers

## 6. Brief project Description

The proposed project "A value chain on ginger and ginger products" will be undertaken by Orissa University of Agriculture and Technology (lead centre) and four partners, CTRAN Consulting Pvt. Ltd, NRPL, Bangalore, KASAM, Koraput and IAEET, Kandhamal.

The present proposal aims at **bringing improvement in value chain on Ginger and Ginger Products** to leverage and provide better income to the ginger growers. The project will not only provide policy leverage but also will ensure better partnership in a region where high poverty and exclusion have been the order of the day. The consortium brings in novel ideas in (1) identification and mass scale cultivation of elite variety of ginger (2) scientific and technology based post harvest management (3) processing (washing, grading, chopping, drying, weighing and coarse grinding) at the cluster level by establishing primary processing facility (PPF) (4) development of value added products from ginger.

The project looks at fulfilling above objectives during the tenure of the project implementation in a consortia approach. **Two scheduled and backward districts, having adequate potential for ginger value addition, have been selected for the project namely Koraput and Kandhamal of Orissa.** In each district **one cluster comprising 500 farmers**, mostly small and marginal, will be associated in the value chain improvement process. The consortium will be headed by Orissa University of Agriculture and Technology (OUAT) who will be providing inputs on technological application for production augmentation of elite variety ginger, promotion of post harvest management technologies with new technological innovation, rendering guidance for product processing and valuation through establishment of PPF at its campus. CTRAN Consulting, a private body is the core partner to OUAT who will be responsible for operating PPF. CTRAN will also provide project management support along with project monitoring, supervision and on the spot guidance to the project for the realisation of the set objectives.

Apart from OUAT and CTRAN, in each district one NGO partner, KASAM in Kandhamal and IAEET in Koraput are selected for direct implementation and rendering support to the farmers. The overall collaboration framework also encompasses Directorate of Extension, OUAT in shape of Krushi Vigyan Kendra (KVK) and ATMA to be associated directly in the intervention process.

Natural Remedies Pvt. Ltd. (NRPL), one of the consortium partner, will play a major role in the value addition aspects of the proposed project. NRPL will be

involved in research, product innovation, production and marketing of several high value-added products from ginger. The processed ginger material at PPF will be purchased directly from the farmers by NRPL through buyback agreements at suitable, pre-agreed price.

The proposed project on ginger value chain development objectively looks at developing value added products in different value chain points of ginger for better market penetration and economic gain of the primary producers. One of the strategies in this regard would be promotion of ginger clusters in different suitable and feasible pockets along with natural agro-ecological vantage points to lead it to **geographical indication**. Available post harvest management practices and technological options will be deployed for product quality improvement. For production augmentation and sustaining the growth, investment will be mobilised in a public private partnership (PPP) or public private community partnership (PPCP) mode. The total financial outlay of the project is estimated to be Rs. 709.6091 lakh (fourth year budget projected for one quarter only) including Institutional Charges. Institutional Charges (institutional overhead) is admissible as per ICAR norm.

Marketing environment and competitor analysis will be done through various tools i.e. SWOT analysis, PEST analysis and Five Forces analysis methods. The SWOT will indicate internal strength and weaknesses along with persisting opportunities and threat in the external environment. PEST analysis will basically deal with Political, Economic, socio-cultural and Technological factors.

The intervention will increase ginger productivity by 50% from its present average level of 20 qt/ha to a maximum of 30 qt/ha. For production augmentation and associated functions, producers' company will be promoted, at least one in each area. Farmers, mostly small and marginal, associated in ginger cultivation at the selected cluster level will be trained on improved package of practices for ginger cultivation, post-harvest management and primary processing of products. Use of organic fertiliser will be promoted in the clusters through farmer's sensitisation, awareness and training.

The project looks at producing value added products from ginger for which two primary and secondary processing units will be established at the cluster level. Chemical analysis of ginger and ginger products will be done with certification and branding. With all these initiatives, the project foresees to augment the income level of ginger producers by at least 10-15% from its present level. With the increasing scope for entrepreneurship, 5% employment growth is expected through direct and indirect means at associated farmer's level. On

farm value addition will increase to 20% of the production from the present stage (on-farm value addition at present is negligible).

## 7. Environmental category issues in the subproject

- Social
- Environmental

## 8. Safeguard policies triggered (World Bank policies)

<b>Triggering Safe Guard Policies(World Bank Policies)</b>			
Sl. No.	Safeguard Policies	Yes	No
1	Environmental assessment		√
2	Natural Habitats		√
3	Pest Management	√	
4	Cultural Property		√
5	Involuntary Resettlement		√
6	Indigenous People		√
7	Forests		√
8	Safety of Dams		√
9	Projects in disputed areas		√
10	Projects on international waterways		√

### *B. Risk analysis and related issues*

Sl. No.	Underlying Causalities / Risk Areas	Details of Causalities / Risk
01	Consortium Level	As different institutions from different standing are part of the consortium for a common purpose, there may be some level of disagreement in certain points. But, as senior professors from OUAT will be heading the assignment, the disagreement will not be hampering the process rather it will be of help in generating new ideas to examine and experiment upon contributing to the overall objective of the project.
02	Partner Level	Different partners have different skill and knowledge base on the thematic area and accordingly their degree of contribution to the project will differ at different points. Project envisages developing a common understanding through capacity building inputs on related areas covering the basics for all. So, it will help

Sl. No.	Underlying Causalities / Risk Areas	Details of Causalities / Risk
		to minimise the operational gap increasing the attitudinal cohesion among the partners.
03	Timeliness (in time launching of the project)	Delay in project implementation and carrying out the activities as per the suggested time frame may be a setback. So, all the associated agencies headed by the lead agency will take appropriate institutional measures to maintain the timeline proposed in project execution with the expectation of support from NAIP at the time of need.
04	Community / Farmer Mobilisation and Motivation	Community mobilisation basically depends upon various social and cultural factors which normally remain out of the control of the project personnel. At this stage it is expected that local environment will be conducive for taking up community mobilisation aspect but definitely it will be time consuming. Secondly, as many farmers have failed to get a remunerative price of ginger for a longer period, they may not show adequate interest. But project framework looks at involving them as a catalytic agent which will be made possible by converting them to a good practitioner through capacity building inputs.
05	Public Private Partnership (PPP) / Public Private Community Partnership	The modus operandi of PPP / PPCP if not handled properly may not be beneficial to the producer's category. So, appropriate project steering mechanism will be instituted during the execution of the project so that farmer's interest will be maintained in the long run.
06	Funds Flow	Timely release of grant fund, directly to the concerned institutions after receiving the utilisation certificate (UC), will be of immense help to expedite the project execution process. Accounting compliance, if felt necessary, may be taken up at its earliest so that consortium partners would be able to comply in time.
07	Organic Certification and IPR	Though it is one of the ambitious expectations of the project as a part of the overall outcome, it may consume a lot more time than expected.

To achieve success in agricultural marketing, holistic approach is proposed to be adopted rather than fragmented effort and attempt has been made here to cover research in production, processing and marketing aspects addressing production to consumption systems. The project focuses at postharvest processing, quality management and preservation of its original value. The proposed system will have both forward and backward linkages with the input and supply chain management system. The project will cater to the need of small and marginal farmers and contribute to the optimal use of available resources in a consortium mode. For sector growth, efforts will be made to mobilise private investment which will help enhancing income of small and marginal farmers, increasing employment status (directly or indirectly) of the people, ensuring farmer's profitability and bringing in competitiveness in the agriculture sector which is basically dominated by small and marginal farmers.

It is expected that the involvement of the private sector will bring in greater efficiency, cost effectiveness and timeliness whereas the involvement of the public sector assures inclusion, equity and trust. Realized that only collective action of all the stakeholders will yield the desired results, the project proposes a consortium approach for implementation of the project along with conducting research in specific areas with the association of national level agencies. Therefore, the Consortium concept is regarded central for facilitating the flow of knowledge, experimentation and value addition in ginger. The value-addition in the value chain is expected to be client driven with the identification of critical missing links and bridging them through research-driven interventions.

## **9. Impact assessment**

Given below and adequately addressed

## **10. Potential indirect and/ or long-term Impacts due to anticipated future activities in the project areas (assessment of anticipated conflict/ complimentarily with the current as well as those proposed for the next four years in the areas of activities of the sub-project):**

- Ginger known as a superb digestive aid and nausea reliever, it also helps heal ulcers, supports cardiovascular health, reduces pain and inflammation, and speeds recovery from colds and flu while reducing fevers.
- Creation of awareness of people about the health benefits seems an essentiality. The impact of all interventions must also be carried out so that further refinement in the processes can be done.
- The health branding was not exploited enough to commercialize ginger despite the fact that ginger is known to have rich composition to heal various health alignments.

- Organic Ginger is an especially wonderful ally because its healing benefits are particular for many daily health concerns. There is a growing demand for standardized extract of ginger for use as ingredients in plant-based medicines, health promoting products (dietary supplements), veterinary products, food and beverage products and herbal cosmetics, in the domestic and international market.
- The standardized extract market is likely to grow further in the light of newer health benefits being revealed, by modern research, from time to time.
- Increased ginger cultivation will be at the cost of replacement of other crops. Obviously less remunerative crops will be replaced.
- Development of rural feed sector with better utilization of feed resources and increased animal production.
- Awareness of farmers for achieving better returns with improved marketing and value addition approaches.
- Rural entrepreneurship will help in reducing migration to urban areas through enhanced employment and income generation.

**11. Identify the key stakeholders and describe mechanisms for consultation with and to them done/ disclosure so far done including pre-project consultations with stake holders workshop before formulating the full proposal, discussing the full proposal with some stakeholders before submission to the PIU:**

**Public institutes:**

1. OUAT, Bhubaneswar
2. KVK, Semiliguda
3. RRTTS, Semiliguda
4. KVK, Kandhamal

**Private participation expected:**

1. Reliance Fresh, Bhubaneswar
2. Big Bazaar, Bhubaneswar
3. Spenceis Daily, Bhubaneswar
4. Priya Foods, Bhubaneswar
5. NRPL, Bangalore

**NGOs:**

1. KASAM, Kandhamal, Orissa
2. IAEET, Koraput

Preliminary discussions were held with few stakeholders and NGOs before organizing stakeholder's workshop. They were made aware of NAIP project, objectives and expected outputs and impact. The final modalities will be worked out after the project approval.

## **12. Chronology of meetings/ activities held in connection with preparation of the concept note & full proposal**

<b>Sl. No.</b>	<b>Date</b>	<b>Programme</b>	<b>Participants</b>	<b>Remarks</b>
1	21.08.08	Meeting of consortium partners and finalisation of project theme based on the received recommendations	Consortium partners	Ginger as project theme was finalised looking at the potentials.
2	25.09.08 to 27.09.08	Orientation on proposal finalisation	Consortium partners	Discussion at NAARM on proposal with technical team members
3	5.10.2008	Meeting of consortium partners, proposal review in the context of the technical committee suggestions	Consortium partners	Discussion on project objectives and activities
4	8.10.2008	Meeting of consortium partners on proposal	Consortium partners	Discussion on project objectives and activities
5	9.10.2008	Meeting of consortium partners on proposal	Consortium partners	Discussion on project objectives and activities
6	10.10.2008	Meeting in Kandhamal	Consortium partners	Discussion on collaboration frame details.
7	5.11.08 - 7.11.08	Meeting at ICAR campus with technical team on proposal components	Consortium partners	Consultation on the proposed project

8	8.12.08	Meeting of CPI and CoPI with consortium partners	Consortium partners	Consultation on the project budget
9	17.12.08	Meeting at ICAR campus with technical team on proposal components	Consortium partners	Consultation on the proposed project
10	18.12.08 - 19.12.08	Meeting at OUAT on technical committee suggestions	Consortium partners	Consultation on the proposed area of improvement
11	28.12.08 - 30.12.08	Meeting at OUAT on proposal finalisation	Consortium partners	Proposal modified, reviewed, finalised & submitted.
12	23.1.08 – 25.1.08	Meeting of partners on RPC suggestion – for project modification	Consortium Partners	Proposals modified as per the RPC suggestion & submitted
13	25.2.09	Meeting of partners on RPC suggestion – for project modification	Consortium Partners	Proposals modified and submitted including NRPL as consortium partner in place of ABICEE
14	26.2.09	Meeting of partners on RPC suggestion – for project modification	Consortium Partners	Proposal modified and reviewed
15	27.2.09	Meeting of partners on RPC suggestion – for project modification	Consortium Partners	Proposal modified incorporating the suggestions of NRPL and it is finalised
NB – Meetings and discussion processes commenced before the acceptance of the concept note is not reflected in the table. The events mentioned here basically reflect the consultation processes after short listing of the concept note for full scale proposal development.				

### 13. Measures to Address the Issues

The project looks at primary and secondary processing and marketing aspects of ginger for the overall benefit of the farmers and the nation as a whole in a

replicable model. Besides, introduction of primary and secondary value added products will be made at specific clusters with technology innovations and utility which will give edge for better market penetration and remunerative price to Ginger growers. Producers and marketing Organisations/companies will be promoted for the purpose in selected clusters. Apart from this, capacity building measures will be taken for primary and secondary stakeholders on post harvest management and marketing.

The objectives of the project have been set out as follows. Each objective is explained with hypothesis, work programme, activities, time-line, methodology, expected outputs, monitorable indicators and anticipated outputs and outcomes.

1. **Production** – Augmentation in production of suitable Ginger varieties (for value addition) in clusters with improved package of practices.

2. **Processing** – Improvement in post harvest technology of Ginger to minimise post harvest losses and research to develop higher value added products.

3. **Market Linkage** – Improvement in value chain of Ginger for improved economic return to growers through remunerative market of branded and certified ginger and ginger based products.

4. **Institutional** - Establishment / linking producer's company/Organisations for better market access and enhanced bargaining power of the producers.

#### **14. Consultation/ disclosures to be done in future**

Local disclosure through mechanisms such as launch workshop, interfaces during the implementation stage of the subproject for sharing the results and soliciting feed-back, one will circulate project brochures and implementation progress from time to time, putting up annual reports on the web site and annual stakeholder workshops wherever feasible.

The consultation/ disclosures will be done as per NAIP guidelines depending on the progress of the project. Participating farmers will be trained through demonstration programmes and workshops on various themes relevant to farming including primary processing, value addition, branding, marketing aspects *etc.*

The project findings (Poster/brochures/ CDs/ videos/ literatures) will be disclosed time to time and necessary feedback will be collected for further improvement and better implementation. Assistance of different related organizations will be taken.

- Capacity building of producers' company / Organisations for production enhancement, processing and marketing of ginger and ginger based products.
- Market linkage of producers' company/Organisations with the marketers in both pre and post harvest situation
- Private investment is expected in ginger based products which will be of immense help to scale up the intervention beyond its geographical boundary. The private investment would be either through PPP or through PPCP.
- Quality ginger production which is processing and value addition friendly will catch up the market in the local and regional level creating further production demand, promoting sustained production of high quality ginger.
- Private investors / local agencies may be interested to establish local processing units benefitting the primary and secondary value addition
- External resources will be mobilised by the producers / marketing Organisations from NABARD and other govt. agencies for production and business scale up.
- Branding and certification of the product will be further helpful for better market penetration of the products there by remunerative price to the primary producers. This will encourage the farmers to go for ginger cultivation and its value addition.
- The geographical indication of the product will further help to take up the plan further as marketing avenues will be more for the produces.



**Consortium PI**

**National Coordinator**

**National Director**

**Annexure I: Environmental safeguard: Activities, issues, impact and mitigation measures**

Sl. No.	Activities	Issues	Anticipated Level of Impacts		Mitigation Measures (Negative Impacts)
			Positive	Negative	
<b>A</b>	<b>Objective One</b>				
<b>A1</b>	Promotion of high yielding ginger variety (as per agro-climatic situation)	Soil micro nutrient loss	4	-	
<b>A2</b>	Facilitate micro credit to farmers for ginger cultivation		-	-	
<b>A3</b>	Facilitate ginger farming in clusters		-	-	
<b>A4</b>	Training / orientation to farmers		-	-	
<b>A5</b>	Demonstration of IPM/INM application in ginger fields		-	-	
<b>A6</b>	Promotion of organic fertiliser and pesticides		4	-	
<b>B</b>	<b>Objective Two</b>				
<b>B1</b>	Development / improvement of suitable on-farm processing methods and equipment for different post harvest operations as washing, peeling, lime treatment, etc.		-	-	
<b>B2</b>	Evaluate solar drying of ginger as compared to traditional drying under sun and commercially used mechanical dryers in terms of quality and acceptability of the final product	Reduced energy consumption	4	-	
<b>B3</b>	On farm value addition, preparation		-	-	

	and storage studies of ginger based products as ginger powder, dehydrated ginger flakes, ginger paste, etc.				
<b>B4</b>	Establishment of processing units for primary and secondary processed products		-	-	
<b>B5</b>	Evaluation of different on farm storage practices for fresh ginger including modified atmosphere packaging		-	-	
<b>B6</b>	Training to farmers on primary and secondary processing		-	-	
<b>C</b>	<b>Objective Three</b>				
<b>C1</b>	Market survey / research and product demand and feasibility study		-	-	
<b>C2</b>	Branding and certification of the product		-	-	
<b>C3</b>	Product catalogue designing and finalisation of range of products		-	-	
<b>C4</b>	Creating storage / preservation facility		-	-	
<b>C5</b>	Linking producers company / Organisations to the buyers – exploring buy back option		-	-	
<b>C6</b>	Examining IPR issues		-	-	
<b>D</b>	<b>Objective Four</b>				
<b>D1</b>	Facilitate to promote producers company / Organisations in the project area		-	-	
<b>D2</b>	Capacity building of producers' company / Organisations for		-	-	

	production enhancement, processing and marketing of ginger and ginger based products.				
<b>D3</b>	Facilitate for market linkage of producers' company/Organisations with the marketers in both pre and post harvest situation		-	-	
<b>1-Very Low, 2-Low, 3-Moderate, 4-High, 5-Very High</b>					

**Annexure II: Social safeguard: Activities, issues, impact and mitigation measures**

Sl. No.	Activities	Issues	Anticipated level of Impacts		Mitigation Measures (Negative Impacts)
			Positive	Negative	
<b>A</b>	<b>Objective One</b>				
<b>A1</b>	Promotion of high yielding ginger variety (as per agro-climatic situation)	Economic gain through productivity	3	-	
<b>A2</b>	Facilitate micro credit to farmers for ginger cultivation	Easy availability of credit	4	-	
<b>A3</b>	Facilitate ginger farming in clusters	A cluster for cost effective farming promotion	4	-	
<b>A4</b>	Training / orientation to farmers	Capacity building	4	-	
<b>A5</b>	Demonstration of IPM/INM application in ginger fields		-	-	
<b>A6</b>	Promotion of organic fertiliser and pesticides	Cost norms (cost minimisation in cultivation)	3	-	
<b>B</b>	<b>Objective Two</b>				
<b>B1</b>	Development / improvement of suitable on-farm processing methods and equipment for different post harvest operations as washing, peeling, lime treatment, etc.	Quality up gradation	4	-	
<b>B2</b>	Evaluate solar drying of ginger as compared to traditional drying under sun and commercially used mechanical dryers in terms of quality and		-	-	

	acceptability of the final product				
<b>B3</b>	On farm value addition, preparation and storage studies of ginger based products as ginger powder, dehydrated ginger flakes, ginger paste, etc.	Economic return to farmers	4	-	
<b>B4</b>	Establishment of processing units for primary and secondary processed products	Local employment generation and facility of processing	4	-	
<b>B5</b>	Evaluation of different on farm storage practices for fresh ginger including modified atmosphere packaging	Research and application	3	-	
<b>B6</b>	Training to farmers on primary and secondary processing	Capacity building	4	-	
<b>C</b>	<b>Objective Three</b>				
<b>C1</b>	Market survey / research and product demand and feasibility study	Identifying products	4	-	
<b>C2</b>	Branding and certification of the product	Geographic indication	4	-	
<b>C3</b>	Product catalogue designing and finalisation of range of products	Product range and quality display	4	-	
<b>C4</b>	Creating storage / preservation facility	Wastage minimisation	3	-	
<b>C5</b>	Linking producers company / Organisations to the buyers – exploring buy back option	Farmer's organisation	4	-	
<b>C6</b>	Examining IPR issues	Benefitting nation	3	-	
<b>D</b>	<b>Objective Four</b>				
<b>D1</b>	Facilitate to promote	Institutional	4		

	producers company / Organisations in the project area	framework of farmers			
<b>D2</b>	Capacity building of producers' company / Organisations for production enhancement, processing and marketing of ginger and ginger based products.	Skill and knowledge enhancement	4	-	
<b>D3</b>	Facilitate for market linkage of producers' company/Organisations with the marketers in both pre and post harvest situation	Market penetration	3	-	
<b>1-Very Low, 2-Low, 3-Moderate, 4-High, 5-Very High</b>					