

PERFORMA FOR THE ANNUAL PROGRESS REPORT

(Reporting Period from April 2017 to March 2018)

- Project Information

Project ID:	NMHS/MG-2016/009/8505-6	Sanction Date:-	31 st March 2016
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Project Title:	Enhancing livelihood of Himalayan communities through action research and converting wild produce into high value products.
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BTG:	Supplementary Livelihood Options
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PI and Affiliation (Institution):	Dr. Rajendra Dobhal Director General Uttarakhand State Council for Science and Technology (UCOST) Department of Science & Technology, Govt. of Uttarakhand, Dehradun Uttarakhand
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Name & Address of the Co-PI, if any:	NA
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Structured Abstract - detailing the current year progress [Word Limit 250 words]:	<p>Survey of four blocks of Chamoli district (Joshimath, Karanprayag, Ghat block and Pokhri) was done in order to gain ethno-botanical and ecological knowledge related to wild produces. Taxonomical identification of 8 selected wild produces out of 18 was successfully done by BSI. Women Cooperative was given training for technology transfer on post harvest management on Mehal and wild apricot and SOP's for their processing was designed. Meeting with NMHS stakeholders and cooperative members was held in which major focus was made on the quality collection and harvesting of wild produces at village level and semi processing will also be initiated for the more income generation of target beneficiaries. Raw materials procured, accordingly to seasonal availability were Mehal, Wild Amla, Wild edible Chestnut, Wild Walnut and Sea-buckthorn was done. Several trails were conducted for standardization of high value products and finalization of 14 high value products (Apricot chutney, Sea-buckthorn nectar, Apricot oil, Kafal nectar, Sea-buckthorn concentrate, Peach chutney, Plum chutney, Roasted nuts, Walnut honey dip, Apricot bar,</p>
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	Granular bar, Walnut salsa, Walnut honey bar and Amla madhu prash) was successfully accomplished. Dehydration technology was more upgraded by adding baking oven into it along with food grade quality of drums.
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Project Partner Name	Affiliations	Role & Responsibilities
Partner 1	Uttarakhand State Council for Science and Technology (UCOST), Dehradun	To provide its institutional support, scientific inputs, linkages and assistance in developing linkages with renowned technical institutions and labs for research development and analysis purposes.
Partner 2	Himalayan Action Research Centre (HARC), Dehradun	Undertake the interventions at grassroots level with communities and technical institutions for livelihood promotion.

- Project Site Details

Project Site	Kaleshwar, Dist. Chamoli, Uttarakhand (Covering 100 villages of Chamoli and Rudraprayag districts of Uttarakhand)
IHR states Covered	Uttarakhand
Long. & Lat.	Latitude: 30.28 Longitude: 79.24
Site Maps	[Already submitted]
Site Photographs	[Already submitted]

- Project Activities Chart w.r.t. Timeframe [Gantt or PERT]

Project Activities	Work Undertaken (of the reporting Period ONLY)				Output
	April 2017 -March 2018				
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
Scoping Study to access distribution, production, traditional knowledge on Himalayan wild produces.	-Ethno-botanical survey and ecological survey was done to gain knowledge related to wild produces.	-Selection of other block of chamoli district i.e. Pokhri (3 villages – Jilasu, Girsha and Sem and 100 HH) Bael and Amla major crop.			-Addition of project area and increase in the number of beneficiaries.
Procurement of wild berries, fruits and nuts for action research and product development.	-Procurement of wild produce like Hinsar,wild Aonla, Kingod, Kafal was done.	-Procurement of wild produce like Kafal, Kingod, Wild apricot, Wild plum, Wild peach, Himalayan firethorn, Wild pomegranate.	-Procurement of wild produce like Mehal, Wild Amla, Wild edible Chestnut, Wild Walnut and Sea buckthorn.		- Procurement of selected wild produces for research and development on basis of standard of procedures designed on the basis of action research and gaps.
Procurement and installation of equipment and accessories.	-Installation of oil press machine was done in CFC Kaleshwar centre	-For technology upgrading installation of baking oven, better food grade storage drums, better quality stainless steel cutters and trays were done.			-Better and quality product development and drying technology for high value products.

<p>Networking & Collaboration with potential agencies.</p>	<p>-Regular follow up for Institutional linkages with Prasan solution, Kerela; HPMC factory, Parwanoo.</p>	<p>-Institutional Linkage with IHBT, Palampur; CITH, Mukhteshwar; HPMC, HP; Pondicherry University.</p>	<p>-Regular follow up with IHBT for institutional linkage and with HPMC regarding vinegar production and customization of technique.</p> <p>-Visited CITH and successful linkage with Institute of Natural and Modern Cosmetech.</p>	<p>-Visited CITH and Institute of Natural and Modern Cosmetech and Regular follow up with IHBT; Palampur, with HPMC, Baddi (Solan).</p>	<p>-Strong linkage on basis of technology transfer and better research and development.</p>
<p>Research development with technical institutions on customization of technologies and processes, product trials, improved storage for developing high value Himalayan products.</p>	<p>-For development of high value products several research trials were conducted for Mix fruit bar, Apricot oil, Apricot chutney, Apricot bar, Hinsar crush, Sea-buckthorn concentrate, Sea-buckthorn nectar, Walnut dipped in honey.</p> <p>-External analytical report shows presence of antioxidant activity in Hinsar & wild Aonla.</p>	<p>-Different product trails for high value products were done :- wild fruit, berries and nuts were carried out such as Apricot chutney, Sea-buckthorn nectar, Apricot oil, Kafal nectar, Sea-buckthorn concentrate, Semi dried prunes, Roasted nuts, Walnut honey dip.</p>	<p>-Trail of Mehal preserve and pumpkin candy was initiated and Mehal pulp was left for aging and fermentation after the activation of Baker's Yeast.</p> <p>-Chocolate trial was made with lecithin which requires better agitation.</p>	<p>-Product trails of Apricot chutney, Sea-buckthorn nectar, Apricot oil, Kafal nectar, Sea-buckthorn concentrate, Peach chutney, Plum chutney, Roasted nuts, Walnut honey dip, Apricot bar, Granular bar, Walnut salsa, Walnut honey bar and Amla madhu prash are finalized.</p> <p>-Product trial for Mix fruit bar, Semi dried prunes, Semi dried apricot, Mehal vinegar, Walnut spread, Mix fruit butter, Apricot appetizer, Amla</p>	<p>-Better designing of quality high value products after gaining complete scientific knowledge.</p>

				appetizer and Apri-choco shots are under process.	
Market Research & Study	<p>-Product notes for Apricot Chutney and Apricot Oil was designed and submitted.</p> <p>-Label for apricot oil and chutney was also designed by the designer containing all nutrient facts.</p> <p>-Cost of production for apricot oil and apricot chutney was also accomplished and its economy has been observed. After complete survey and analysis for high value products, bottles and jars were selected and finalized for designing.</p>	<p>-Label were designs for products like Apricot chutney, Apricot oil, Nutty roast, Honey dip Walnut, Sea-buckthorn nectar, Sea-buckthorn concentrate, Kafal nectar and Semi dried prunes.</p> <p>-Designing and customization of quality packaging material.</p> <p>-Product note on 13 high value products were designed.</p> <p>-Moulds for pet bottles designed.</p> <p>-Customized bottles for upcoming high value products.</p>	<p>-Designed different bottles with caps for upcoming high value products were (nectar, oil, concentrate, and appetizer).</p> <p>-Final design of labels for apricot oil, apricot chutney, plum chutney, peach chutney, seabuckthorn nectar, seabuckthorn concentrate, roasted nuts, kafal nectar and walnut honey dip label has been collected.</p>	<p>-Labels for 14 high value products are printed and rest 13 high value products labels are under process.</p> <p>-Designed packaging material for bars was finalized and collected.</p> <p>-Costing, batch coding and pricing of 14 finalized high value products was done.</p>	-Quality and product presentation and promotion.

- Project Beneficiary Groups

Beneficiary Groups [Capacity Building]	Target	Achieved
No. of Beneficiaries with income generation:	2997 households	4067 households
No. of stakeholders trained, particularly women:	10 women cooperative	25 women cooperative
No. of capacity building Workshops/ trainings:	10 training	3 training
No. of Awareness & outreach programmes:	In all selected Blocks and Districts	Meeting with NMHS stakeholders and cooperative members was held in which major focus was made on the quality collection and harvesting of wild produces at village level and semi processing will also be initiated for the more income generation of target beneficiaries.
No. of Research/ Resource Persons Trained:	5 manpower	5 manpower

- Project Progress Summary (for the Reporting Period ONLY)

Description	Total (No.)	Description (attach separate Annexure, if reqd.)
<i>IHR States Covered</i>	1	Uttarakhand
<i>Project Site/ Field Stations Developed:</i>	1 (Already submitted) ... (Already submitted)
<i>No. of Patents filed (Description):</i>	0	-
<i>Article/ Review/ Research Paper/ Publication:</i>	0	-
<i>New Methods/ Modellings Developed (description in 250 words):</i>	10	(SOPs) for procurement and storage of wild produce (Wild apricot, Wild plum, Wild peach, Hinsar, Kingod, Kafal, Ghingaro, Wild Amla, Wild Walnut and Sea buckthorn) were designed on the basis of practical working and gaps.
<i>No. of Trainings (No. of Beneficiaries):</i>	2	Training on post harvest management on Mehal and Apricot.
<i>Workshop:</i>	-	-

<i>Demonstration Models (Site):</i>	Attach maps about location and photos (Already submitted)
<i>Livelihood Options:</i>	-	-
<i>Training Manuals:</i>	5	Harvesting and post harvesting training manual (apricot, mehal, plum, peach and walnut) (Hindi and English).
<i>Processing Units:</i>	1	(Already submitted)
<i>Species Collection:</i>	18	Several species of wild berries, fruits and nuts were collected.
<i>Species identified:</i>	8	Species taxonomically identified were-Wild peach, Kingod, Mehal , Ghingar, Bhenkal , Wild Walnut, Hinsar and Seabuckthorn.
<i>Database/ Images/ GIS Maps:</i>	-	Already submitted

Note: Photos/ maps should be attached in high quality in compatible formats viz., JPEG, .JPG, .PNG, .SHP, etc. along with a suitable figure legend/ caption.

• **Project Concluding Remark (for the Reporting Period ONLY)**

Kindly brief of the following Progress Parameters (and detailed in Annexure-I) for the Reporting Period ONLY:

Objectives	Outputs / Outcomes against Objective	Monitoring Indicators (as specified in Sanction Letter)	Measurable Deliverables (as specified in Sanction Letter)
Action research and convert low value wild produce into high value products	<ul style="list-style-type: none"> Village level assessment of wild fruits in Joshimath, Ghat, Pokhri and Karanprayag block of Chamoli area was done. Procurement of wild berries, fruits and nuts for action research and product development was done. To observe chemical and physical properties of wild varieties for 	<ul style="list-style-type: none"> Detail study report of survey and procurement of wild products. No. of products processed and developed. (Nos.) 	<ul style="list-style-type: none"> Access benefits sharing (ABS) framework developed addressing legal aspects. 5 customized techniques on drying, oil extraction, decortications, longer shelf life, colour and quality retention developed for product development and storage developed. By-products of 18 wild berries, fruits and nuts developed, 100 villages linked with women cooperatives,

	<p>understanding the nature of the produce for high value product development internal and external analysis were done.</p>		<p>technologies customized and community model developed.</p>
<p>Use traditional knowledge and promote high value products and benefitting both rural communities and consumers</p>	<ul style="list-style-type: none"> • For promotion of the high value products, different trails and sensory analysis of different products from these procured wild fruit, berries and nuts were carried out such as Apricot chutney, Sea-buckthorn nectar, Apricot oil, Kafal nectar, Sea-buckthorn concentrate, Peach chutney, Plum chutney, Roasted nuts, Walnut honey dip, Apricot bar, Granular bar, Walnut salsa, Walnut honey bar and Amla madhu prash. • Develop customised bottles with caps, jars and other packaging material for high value products. • Collection of market information and worldwide demand analysis of value added products from wild produces and scope of high value products in markets. 	<ul style="list-style-type: none"> • No. of beneficiaries/ villages (Nos.). • Market linkages established for developed products including ABS mechanism (Nos. of products). • Women participation in collection and production (Nos.). 	<ul style="list-style-type: none"> • Marketing linkages established for developed products in collaboration with women cooperatives. • By-products of 18 wild berries, fruits and nuts developed, 100 villages linked with women cooperatives, technologies customized and community model developed. • Photographs of different trails.
<p>To establish successful community model that is replicable and promote sustainable</p>	<ul style="list-style-type: none"> • Development of bankable plan. • Establishment of organic certification and FSSAI. 	<ul style="list-style-type: none"> • Models and knowledge products developed and published out of the projects (Nos.). 	<ul style="list-style-type: none"> • Marketing linkages established for developed products in collaboration with women cooperatives.

use of natural and wild products of Himalayan region against climate change.	<ul style="list-style-type: none"> Modelling with women cooperative. 		
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Methodology (in brief):	<ul style="list-style-type: none"> Purchasing of chemicals for testing of wild produces. Purchasing of Equipments for better and quality product development. Collection of raw material like Wild apricot, Wild plum, Wild peach, Hinsar, Kingod, Kafal, Ghingaro, Mehal, Wild Amla, Wild edible Chestnut, Wild Aonla, Wild Walnut and Sea buckthorn. Internal and external analysis of the procured wild produces. 14 high value products have been standardized by conducting numerous trails.
Major Research Achievements:	<ul style="list-style-type: none"> Procurement of wild berries, fruits and nuts for action research and product development. Physicochemical analysis of procured wild produce. Several product developments trail from procured wild was made and 14 high value products were finalized out of 23 targeted high value products.
Brief Conclusion - the current progress – for the reporting period ONLY (point wise):	<ul style="list-style-type: none"> Finalization and Launching of 14 high value products including packaging and labelling.
Progress Achieved (%):	85%
Remaining work to be done:	<ul style="list-style-type: none"> Products for market trials and checking their market acceptability. Upgrading packaging material for high value products. Final shaping and designing of handbook Development of a bankable plan for the cooperative

- Next Reporting Period Plan and Projections (month-wise).

Month	Month wise major activity
April 18	<ul style="list-style-type: none"> • Bulk production of finalized products for market trials and checking their market acceptability. Quality packaging material for bars • Collection of quality photography as per season for handbook • Liaising with Major Super market retailers in metro cities- Delhi-NCR • Technology transfer related to post harvesting techniques for berries
May 18	<ul style="list-style-type: none"> • Customization of bar cutting machine for standardized cost effective cutting for finalized bars • Research and development related to preservation technologies for raw as well as processed products. • Upgrading packaging material for high value products. • Shaping up the handbook containing 18 chapters related to wild produces.
June 18	<ul style="list-style-type: none"> • Participation in various exhibitions in order to promote the standardized product and to get the feedback for improvisation. • Bulk osmotic dehydration of wild fruits for value addition (plum, peach, apricot) • Trainings to women cooperative regarding material handling and inventory management • Final shaping and designing of handbook • Technology transfer related to nectars and concentrate
July 18	<ul style="list-style-type: none"> • Technology transfer training to women cooperative for high value product development • Complete storage study of high value products (cosmetic) with recommended packaging material • UCOSA certification for high value wild products • Technology transfer training related to peach and plum
Aug 18	<ul style="list-style-type: none"> • Institutional linkage for quality material handling and processing • Complete compiling and writing of post harvesting and product development data for Handbook • Proper set up of cosmetic unit in CFC Kaleshwar centre and finalization of packaging material for 3 cosmetic products
Sep 18	<ul style="list-style-type: none"> • Sorting and synchronization of the required photographs for the handbook • Designing of labels for these cosmetic products • Adaptation of the selected high value products in the bankable plan of the cooperative

- Additional information, if any:

Attached copy: Annexure-I (Detailed Progress Report 2017-18)

Submitted to:

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Dated (04/06/18)