

# National Mission on Himalayan Studies (NMHS)

## PERFORMA FOR THE HALF YEARLY PROGRESS REPORT

(Reporting Period from 01.04.2017 to 30.09.2017.)

### 1. Project Information



Project ID	NMHS/SG-2016/018/381	Sanction Date.	31.03.2016
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Project title	<b>Development of Psychrophilic earthworms for biowaste conversion &amp; utilization in Guraz &amp; Tulial Valleys of Jammu &amp; Kashmir</b>
BTG	Environmental assessment & management.
PI and Affiliation	<b>Dr. Tahir Ahmad Sheikh,</b> Assistant Professor (Agronomy) Division of Agronomy, Faculty of Agriculture, Wadura, Sopore, J&K Sher-e-Kashmir University of Agricultural Sciences & Technology, Shalimar, Srinagar, J&K
Name & Address of the Co-PI,	<b>Dr. Zahoor Ahmad Baba</b> Sr. Scientist (Soil Microbiology) Regional Research Station, Wadura, Sopore, J&K

Structured Abstract detailing the current year progress [Word Limit 250 words]:	The project activities were conducted smoothly during the second phase (2017-18) of the project period in collaboration with local project partner from department of Agriculture. Two more biowaste conversion units were established in Dawar and Baktore villages of Guraz. The beneficiary farmers were also supplied with cold tolerant vermiculture locally collected and developed. The farmers were also given a technical demonstration about collection, processing and conversion of different biowastes into a useful soil amendment. Three (03) farmer training programmes were also conducted during the period and around hundred twenty farmers participated from Chorwan, Masten, and Burnoi villages of Guraz and Tulial. Monitoring of previously established units has also been conducted and it was observed that the units are progressing smoothly. One new literature was also prepared and printed in local language ( copy of which is also attached )
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Project Partner Name	Affiliations	Role & Responsibilities
Mr. Ab. Rehman Samoon Sub Divisional Agricultural Officer, Dawar, Guraz.	Department of Agriculture J&K Govt.	<ul style="list-style-type: none"> <li>➤ Facilitate the identification of progressive farmers of Guraz &amp; Tulial sub divisions of Distt. Bandipora</li> <li>➤ To facilitate the construction of biowaste conversion units.</li> <li>➤ To help in dissemination of technology among farmers at large scale.</li> </ul>

## 2. Project Site Details

Project Site	Gurez (Distt. Bandipora)
IHR States Covered	Jammu & Kashmir
Long. & Lat.	1957'6.120"E & 4055'10.920"N
Site Maps [Attach	
Site Photographs	


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



Project Activities	Work Undertaken (of the Reporting Period ONLY)				OUTPUT
	Year 2017-18				
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
Collection of earthworms	Earthworms collected from two more locations	Development of vermiculture			
Establishment of units	Development of vermiculture	Identification of two new location with Progressive farmers to establish two more biowaste conversion units			
Capacity building programmes	Demonstration of vermiculture development	03- more capacity building programmes conducted which involved 120 tribal farmers			

### 4. Project Beneficiary Groups

Beneficiary Groups [Capacity Building]	Target	Achieved
No. of Beneficiaries with income generation:	03	02
No. of stakeholders trained, particularly women:	300	120
No. of capacity building Workshops/ trainings:	05	03
No. of Awareness & outreach programmes:	--	--
No. of Research/ Resource Persons Trained:	10	04

### 5. Project Progress Summary (for the Reporting Period ONLY)

Description	Total (No.)	Description (attach separate Annexure, if reqd.)
<i>IHR States Covered</i>		Jammu And Kashmir
<i>Project Site/ Field Stations Developed:</i>		Guraz & Tulial 
<i>Article/ Review/ Research Paper/ Publication:</i>		Nil
<i>New Methods/ Modellings Developed (description in 250 words):</i>		-

<i>No. of Trainings (No. of Beneficiaries):</i>		03 trainings conducted (120) beneficiaries participated
<i>Workshop:</i>		-
<i>Demonstration Models (Site):</i>		
<i>Livelihood Options:</i>		Vermicompost production
<i>Training Manuals:</i>		One
<i>Processing Units:</i>		
<i>Species Collection:</i>		Two
<i>Species identified:</i>		<i>Easinea foetida</i> <i>Aporacteda caloginosa</i>
<i>Database/ Images/ GIS Maps:</i>		-

## 6. 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)
Collection, identification and maintenance of dominant species of earthworms from different habitats of Guraz & Tulial valleys of the region.	During the reporting period, the earthworms were further collected from two new locations of Gurez and Tulial. They were maintained for	The earthworms are Psychrophilic in nature and have been explored for using their potential in the biowaste conversion under cold habitats of study area.	During the reporting period the vermiculture is under developmental process to suffice the culture requirement for two newly established biowaste conversion units.

	further development and multiplication under the same cold eco system.		
Screening & development of efficient Psychrophilic earthworm species for their exploitation in sustainable biowaste degradation within the valleys and utilization of vermicompost for agricultural land to quickly regenerate and improve the soil structure.	The composted material after the conversion employing exotic cold tolerant earthworms was applied to the farmers agriculture field after demonstrating the methodologies and practices for improving the soil health.	The monitoring of three already established was carried out to assess the performance of Psychrophilic earthworms and was observed the speedy conversion of the same earthworms especially during the summer period.	Two different cold tolerant earthworm species were collected and identified as <i>Easinea fotieda</i> and <i>Aporacteda caliginosa</i> which have been both found suitable for biowaste conversion under Himalayan ecosystem.
Demonstrate methodologies employed & skill development among farmers.	Capacity building programmes were also conducted during the reporting period along with the practical demonstration of methodologies supported with published literature.	Both male and female tribal farmers participated in the capacity building programmes.	The capacity building programmes involved 120 tribal farmers with scale up their skills with respect to conversion and utilization of biowastes into an organic amendment. Besides awareness about the ecosystem services.
<b>Methodology (in brief):</b>			
<b>Major Research Achievements:</b>	The combination of different substrates was evaluated by employing cold tolerant earthworms		
<b>Brief Conclusion - the current progress – for the reporting period ONLY (point wise):</b>	The work is under progress especially the construction of biowaste conversion units. The vermiculture which is required for the newly established units is also under the process of development. Training programmes have also been conducted in those villages where the units are established previously. The literature was also developed during the reporting period in the local		

	language and was distributed among the tribal farmers during the training programmes conducted.		
Progress Achieved (%):	40%		
Remaining work to be done:	Two (02) more biowaste conversion units are to be established		
Progress Achieved (%):			
Remaining work to be done:			

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

- The final annual report for the year 2017-2018 will be submitted in the month of March 2018

#### 8. Additional information, if any:

- It is requested that the budget amount of Rs. 100000/- under the head Expendables/consumables sanctioned for the third year may kindly be released as early so that establishment of units could be carried out in one go.
- It was also requested to scale of the package of Field Assistant to Junior Research Fellow from Rs. 12000/- to Rs. 16000 + 10% HRA respectively, so that talented and experienced persons could be retained in the project.

Submitted to: Submitted by:  
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 Institution (Seal):  
 Dated (03/02/2018):



Principal Investigator  
 NMHS-PMU, GBPNIHESD  
 Project on Biowaste Conversion

## Annexure-I

1. The detailed report of the project activities against each objective with measurable deliverables during reporting period (01.04.2017 to 30.09.2017) is as under:

S.No.	Objective	Results/outcomes	Measurable deliverables
01.	Collection, identification and maintenance of dominant species of earthworms from different habitats of Gurez & Tulial valleys of the region.	During the reporting period, the earthworms were further collected from two new locations of Gurez and Tulial. They were maintained for further development and multiplication under the same cold ecosystem. The earthworms identified as <i>Easinea foetida</i> has been found efficient in consuming the different types of biowastes and leaving the waste in the form of nutrient rich vermicastings.	During the reporting period the vermiculture was under developmental process to suffice the culture requirement for two newly established biowaste conversion units. The development and multiplication process of the earthworms has been found at its peak because of the optimum growth requirements.
02	Screening & development of efficient Psychrophilic earthworm species for their exploitation in sustainable biowaste degradation within the valleys and utilization of vermicompost for agricultural land to quickly regenerate and improve the soil structure.	The composted material after the conversion employing exotic cold tolerant earthworms was applied to the farmers agriculture field after demonstrating the methodologies and practices for improving the soil health.	Two different cold tolerant earthworm species were collected and identified as <i>Easinea foetida</i> and <i>Aporacteda caliginosa</i> which have been both found suitable for biowaste conversion under Himalayan ecosystem. The earthworms will be supplied to the beneficiaries farmers for utilization in newly established biowaste conversion units. The vermicompost produced out of the biowaste conversion have been integrated into the nutrient management of field crops like maize and buckwheat. The trials of these crops were laid at Burnoi and Chorwan villages of project area where the units are pre established. Periodical observations of the crops were

			recorded and after analysis were found significantly higher compared to the checks of the same crops in the same area.
03	Demonstrate methodologies employed & skill development among farmers.	Capacity building programmes were also conducted during the reporting period along with the practical demonstration of methodologies supported with published literature. The units established during the previous year have been found efficient models for demonstration and skill development among the tribal people during the reporting period.	The capacity building programmes involved 120 tribal farmers with scale up their skills with respect to conversion and utilization of biowastes into an organic amendment. Besides awareness about the ecosystem services. The farmers have shown keen interest in the recycling of biowastes generated from household and agriculture fields.

## **2. Establishment of Biowaste conversion units at Gurez and Tulial valleys**

Apart from the already established three biowaste conversion units during the financial year 2016 -17, two new biowaste conversion units were also established by identifying the progressive farmers with the help of Department of Agriculture. The initiation of process for establishment of units started with invitation of tenders from registered suppliers/contractors. However the university approved contractor was selected for construction of work with due recommendation of project committee and competent authority.

## **3. Development of vermiculture**

The earthworms were collected from two more cold habitats of Gurez (Baktore) and Tulial (Sheikhpora) and were placed for further development and multiplication at the beneficiary farmer of Chorwan village. The earthworms have shown speedy performance in the conversion of different biowaste substrates.

## **4. Demonstration of Methodology**

The tribal farmers were requested to assemble at the pre established units whereby demonstration of different techniques which includes segregation of waste material into degradable and non degradable, precautions for carrying out during the process of waste conversion, development of vermiculture and methods of separation of vermiculture from the



vermicompost. The literature pertaining to biowaste conversion, development of vermiculture and utilization of vermicompost was also published in local language and distributed among the farmers.

## **5. Monitoring and Evaluation of project activities**

The monitoring and evaluation of previously established biowaste conversion units were carried out by Project staff in collaboration with Department of Agriculture and Krishi Vigyan Kendra. The progress of the project activities were found satisfactory, which includes the development and multiplication in the vermiculture. Besides, the farmers have shown keen interest in adaption and scaling up the technology disseminated by the project.

## **6. Financial Status**

Budget allocation for the 2<sup>nd</sup> year of the project was sanctioned after the complete review of first year project activities. The 20% of the 2<sup>nd</sup> year budget of the project had been utilized during the reporting period.

## **7. Project Staff**

Project staff is actively engaged with the project activities. One skilled labour has been engaged at project location to look after the routine developments in vermicomposting processes and multiplication of vermiculture.



**Dr. Tahir Ahmad Sheikh**  
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