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**CDA's Agrarian Reform activities are contributing to Earth and Climate  
through Organic Compost**

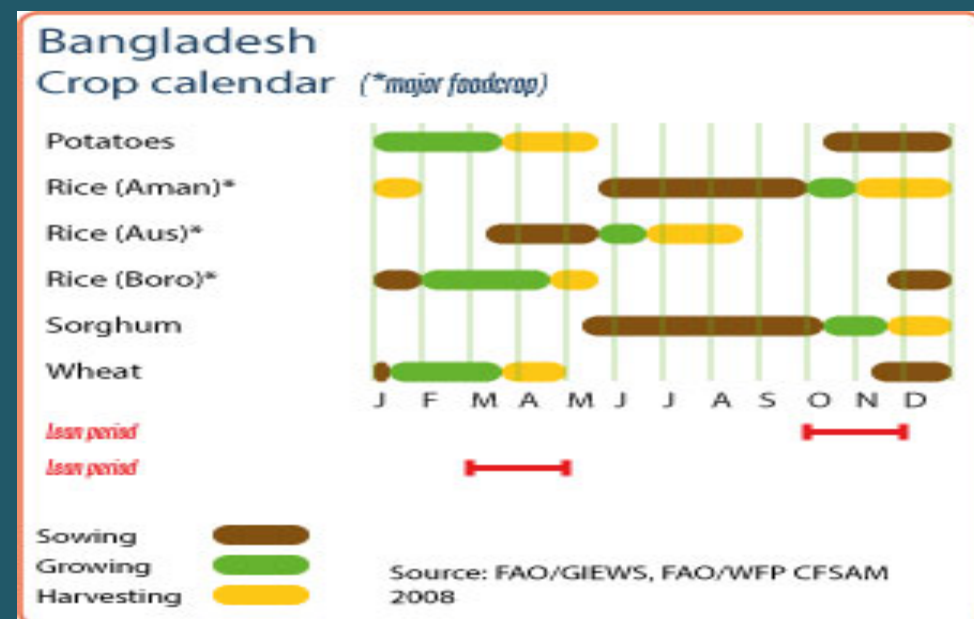
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**Problems statement on sustainable agriculture, food security, environment and Livelihood in  
the Northern Part of Bangladesh:**

The Northern region continues to be characterized by a large agrarian base where approximately 80% of the populations are living directly from Agriculture related activities. Agriculture of the Northern part is heavily depending on chemical fertilizers and pesticides. Use of these compounds over a long period resulted into poor soil fertility, human and animal health hazards, disturbed eco-balance, all leading to low productivity, soil, water and air pollution. Moreover, the cost of agriculture has increased manifold with declining yield levels and growing dependence on market for purchase of chemical fertilizers and pesticides. From now the most urgent concern is to make sensible use of chemical inputs and application of bio-products so as to ensure minimal damage to the environment without any reduction in yield of crops. The Northern and North Western region has the potential for growing different crops but due to water scarcity, high temperature, degraded soil moisture some potential crops are not able to growing successfully. These reasons are being increasing day by day. Due to climate changes and its consequences, Food security is also challenging considering the climate change, land degradation, water scarcity, and temperature increasing and natural disasters. Until, sustainable agricultural technologies are not highlighted as important both by the research institutions, private and by the public policy makers. Agriculture is depending on high market inputs investment which leading by the rich farmers and agro investor in the Northern and North Western Region. Carbon released from intensive farming and soil exploitations are significant contributory factor to climate change in the Northern Part of the country. Due to Paddy, Maize and Wheat production round the year in this region without rest of Soil to aim of high production which leading causes of Agriculture related carbon emission in this region (see the national Cereal production statistical data and bar chart). Also Agriculture Crops Process related industries (Rice husking mills...etc) are releasing carbon continuously in this region. Poor, Marginal and Smallholders are facing big challenges to manage high commercial, industrial agriculture on chemical fertilizers & intensive farming practices inputs for obtaining high production. Also Small farmers in the country are struggling to compete in today's liberalize and globalised market place. Agriculture is the main source of livelihood especially for the Northern part of the country. It is important to comment on use of sustainable agriculture

technologies for food security, environment and livelihood improvement concerning on state policy and legislative issues.

Paddy, Maize and Wheat production round the year in the Northern region without rest of Soil to aim of high production on HYV which leading causes of Agriculture related carbon emission (see the national Food Cereal production crop calendar, statistical data and bar chart). Also Agriculture Crops Process related industries (Rice husking mills...etc) are releasing carbon continuously in this region.



### Bangladesh Cereal production

	2011-2015 average	2015	2016 forecast	change 2016/2015
	000 tonnes			percent
Rice (paddy)	51 357	52 445	52 340	0
Maize	2 356	2 580	2 600	1
Wheat	1 175	1 350	1 360	1
Others	76	77	77	0
<b>Total</b>	<b>54 964</b>	<b>56 452</b>	<b>56 377</b>	<b>0</b>

Note: percentage change calculated from unrounded data.  
 Source: FAO/GIEWS Country Cereal Balance Sheets

### **Contribution of CDA's Agrarian Reform Activities:**

CDA is a Non Government Development Organization (NGDO) established in the North West Part of the Bangladesh in the year 1985-1986 with the concept on Integrated Community Development Program (ICDP). CDA followed by right based approach working with poor, landless and marginal farmers along with the plain land Indigenous people ( IP) for their empowerment and securing access to the land Rights from its inception. CDA initiated and facilitated to the Integrated Rural Development Program (IRDP) during the period from 1989 to 1995 considering the local needs and demands of the village poor people as well as depending on the resource available around the village. Now CDA followed to more focus on "Sustainable Organization for Land Rights and Agrarian Reform (SOLAR)" from 2010 to 2019 and ahead for food security and people centered land governance. CDA development model is contributing to qualitative changes in the lives of rural poor and IPs in the Northern part very significantly. CDA's mission is to build the unity among the landless, disempowered and the marginalized rural poor people through building institution in rural areas for addressing the issues from the contextual needs.

### **CDA's Agrarian Reform activities are contributing to Earth and Climate through Organic Compost:**

During the measure of SOLAR activities outcome, CDA PMES explored the change results on organic compost training, production and use of organic compost are contributing to earth and climate in the North West part of the country.

CDA's Sustainable Organization building, Land Rights and Agrarian Reforms activities are important because CDA facilitate to protect, secure and ensure the rights of the poor, landless, marginal farmers and Indigenous people. Significantly land surface of the Northern region of the country has become degraded and continuing of over exploitation for increasing production. In this production process, frequent chemical fertilizers and other inputs use are negative impact on soil quality, biodiversity and disposal of agrichemical etc. Part of agrarian reform activities of CDA, marginal and small holders are contributing to Earth and Climate through producing organic compost. The initiatives are need to create agriculture market and trade on small and medium scale local homemade organic fertilizer for increasing return and market revenue of organic producers especially men, women and youth. The Organic agriculture market and trade will help to develop and increase sale location for producers groups, access and availability for local farmers. To promoting sustainable agriculture technologies for food security, improvement of environment and livelihood of Farmers in North Western region, CDA organized Training of Trainer on staff, Training of Farmers (TOF) and Exposure on Sustainable Agriculture by technical facilitation of CDA training cell. During the last four years, CDA trained 411 (M-247 & F-164) program participants on Sustainable Agriculture. Trained program participants were facilitated and transfer the technologies with rural

community. The following training data and field level output achieved after this Sustainable Agriculture activities.

**DETAILS TRAINING ACHIEVEMENT  
FROM JANUARY 2010 TO JUNE 2016**

Fiscal Year	Training Title	For whom	Duration	Participant			Remarks
				Female	Male	Total	
2011-12	TOF on Sustainable Agriculture	PO leaders	03 Days	13	46	59	
	TOT on Sustainable Agriculture	Staff member's	03 Days	07	22	29	
	Planning workshop on Fish & Duck project	PO members	Day long	15	15	30	
	Planning workshop on Goat, Cow & Pig rearing project	PO members	Day long	17	15	32	
	Planning workshop on Agriculture Farming	PO members	Day long	17	17	34	
	<b>TOTAL (2011-12)</b>				<b>69</b>	<b>115</b>	<b>184</b>
2012-13	Training on Vegetable Cultivation whole in the year	PO members	05 Days	12	11	23	
	Animal house boundary (Livestock) training	PO members	05 Days	12	13	25	
	Exposure to learn on Organic Agriculture	Staff members	03 days	10	20	30	Exposure
	<b>TOTAL (2012-13)</b>				<b>34</b>	<b>44</b>	<b>78</b>
2013-14	Bio chemical Agriculture Training	PO leaders	03 Days	13	17	30	
	Training on Health Care Policies in Bangladesh	PO leaders	03 Days	21	36	57	
	Vegetables gardening whole of the year through bio-chemical	PO members	03 Days	13	19	32	
	<b>TOTAL (2013-14)</b>				<b>47</b>	<b>72</b>	<b>119</b>
2014-15	Fish Culture Training	PO members	03 Days	03	07	10	
	Training on Bio- chemical Agriculture & Vegetable Garden	PO members	03 Days	05	05	10	
	Training on Animal Resources & Dairy Production	PO members	03 Days	06	04	10	
	<b>TOTAL (2014-15)</b>				<b>14</b>	<b>16</b>	<b>30</b>
<b>G. Total</b>	<b>Sustainable Agriculture Training</b>			<b>164</b>	<b>247</b>	<b>411</b>	

**DETAILS ACHIEVEMENT/OUTPUTS  
ON TRAINING FROM JANUARY 2010 TO  
JUNE 2016**

**CDA's Intervention and its Change Results**

HIP, PIT & Vermy/ **WORMERY Compost** fertilizer making information CDA's working district of  
Dinajpur and Thakurgaon:

Preparation of Compost Fertilizer by the Peoples Organization (PO) members	Type of Compost	Yearly Target (Up to June, 2016)	Achievement ( Up to June, 2016)	Deviation	%	Remarks
	Hip	1025	1020	-5	0.49%	212 nos. of Individual Surveyed for measure the uses of organic compost
	Pit	1025	703	-322	31.41%	
	Vermey	1252	458	-794	37%	
	Total	3302	2181	-1121		

Source: June, 2016, CDA MIS report.

**The following survey statistics on CDA's Agrarian service activities are contributing to Climate through Organic Composting: like Compost and Carbon Sequestration**

CDA's PMES conducted an individual purposive sample questionnaire survey from 212 beneficiaries among existing 2000 field level beneficiaries. The following composition addressed on individual survey

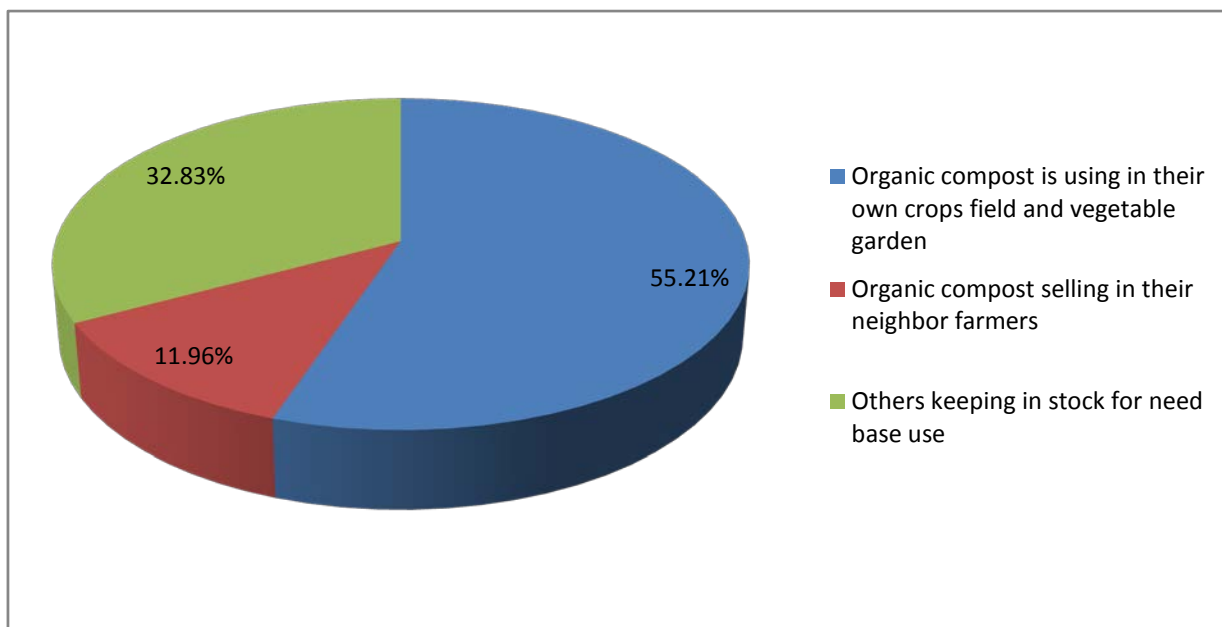
- Identity of samity and People Organization
- Ownership of cultivable land
- Producing & using of organic composts fertilizers
- Producing & using of pesticide; Liquid/solid
- Marketing of liquid and solid fertilizer
- Capacity to produce organic compost fertilizer in next future
- Market revenue generation through sale on organic fertilize

The following types of organic compost are making by the CDA's right holders in Thakurgaon and Dinajpur District that were found the sample questionnaire survey part of **CDA's Agrarian Reform activities**. Major compost activities found on HIP PIT, Local PIT and WORMERY Compost method and

using locally available natural and green ingredients. The CDA's fact sheet is focusing only organic compost method which is practicing by the CDA's right holders under the part of Agrarian Reform Activities.

Part of the CDA's PMES sample survey, 209 individual counted on organic composes including WORMERY Compost made using worms. Average per month **85.20 metric** ton organic compose is producing by surveyed **(209) Right holders** of CDA in Thakurgaon and Dinajpur districts. Part of this production, **55.21% organic compost** is using in their own crops field and vegetable garden, 11.96 % organic compost selling in their neighbor farmers and others keeping in stock for need base use in seasonal crops. This method is highly visible **Carbon Sequestration hub** on CDA's SOLAR Program which is need to regional mainstreaming market and its revenue generation process to create market and employment of men, women and youth. Following Pie chart shows the uses of Produced Organic Composed by CDA program participants :

- **55.21%** of produced Organic compost is using in their own crops field and vegetable garden
- **11.96%** of produced Organic compost selling in their neighbor farmers
- **32.83%** of produced Organic compost while keeping in stock for need base gradual use of their seasonal crops and need to promote in the local market for establishing the organic enterprises / trade with a view to generate market revenue.



Picture views of organic compost production and use:



**WORMERY Compost using locally available natural and green ingredients:-**





Field level Bio Pesticide making orientation:







## Hit, Pit & Vermi compost Sample Survey coverage on Two Districts

Region name	Upazila/Sub district	PO Coverage	Samity/Group coverage	Beneficiary coverage
<b>Dinajpur District</b>				
Region 01	Birjol	20	27	29
	Bochagonj	9	12	15
Total		29	39	44
Region 02	Birgonj	15	25	53
	Kaharol	11	16	18
Total		26	41	71
Region 03	Dinajpur sadar	12	15	25
	cirir bondar	17	20	23
Total		29	35	48
<b>Thakurgaon District</b>				
Region 04	Horipur	1	2	3
	Ranisonkcoil	5	5	9
Total		6	7	12
Region 05	Pirgonj	11	12	21
	Thakurgoan sadar	14	15	16
Total		25	27	37
All total Dinajpur		84	115	163
All total Thakurgoan		31	34	49
<b>Final Survey Sample: Total</b>		115	149	212

**Conclusion:** Present mode of the production systems in the Northern region of country is highly commercialization in the name of national Food Security vs HYV production that process completely depending on industrial inputs. Sustainable local organic agriculture hub is completely absent in the local agri inputs markets. Highly commercialization and chemical fertilizer using process are burning issues of human, animal and plant health. Industrial agriculture on chemical fertilizers and intensive farming practices Carbon released by restless soil exploitation has been a significant contributor to climate change in this region as well as leading causes soil fertility degradation. Drought, extreme use of ground water and scarcity of ground water are big challenges in this region. The food production

process with restless soil exploitation which is not addressing carbon sequestration issues in whole of the Northern region in Bangladesh. Applying organic matter to soils is one of the most effective ways to divert CO<sub>2</sub> from the atmosphere and convert it into organic carbon in soils. The nitrogen in compost can increase soil productivity, which can lead to increased crop residues and an increased return of carbon to the soil. There are need to be measure different types of agrarian reform like concerned with the relation between production and distribution of land among the poor, marginal farmers, landless and IPs, integration of land and training of the farmers. The measure also focus on securing the rights of the farmers, the rights of the labors working on leased land, commercial agri land and rights of human, animal and plant health. CDA's Agrarian Reform activities will contribute to sustainable agriculture, land use practice and organic agriculture technology practice in this region with a view to develop organic input market hub for increasing agriculture productivity, agriculture market and trade opportunity to rural people for **Bring down the real cost of food**. To increase organic compost, use of bio pesticide and carbon sequestration environment, ***CDA need to mobilize internal and external resources for scaling up of this agrarian reform activity for improving organic agriculture & climate smart cultivation practice in northern region***. The initiative will create alternative women and youth leader enterprise for generating market revenue. The likeminded International donor agencies, national government department and private sectors need to come forward to investment in the People Centered Land Governance and Agrarian services.

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