Indo-Global
Social Service Society

Celebrating the Spirit of Humanity

60 ANNIVERSARY igsss

Harvesting Happiness from Small Pieces of Land

Representing stories of change...

IGSSS promoting resilience...

Indo Global Social Service Society (IGSSS) is promoting resilience among drought-affected vulnerable farming households in Karlamunda Block of Kalahandi through its project on Climate Resilience Adaptive Farming in Rural Tribal Communities in Kalahandi (CRAFT-K).

In 2019, IGSSS initiated a pilot with 200 women on Gharbadi cultivation in managing homestead land for nutritious clean, green, fresh, and safe food, the year round.

Harvesting happiness on small pieces of land provides practical knowledge, process, steps, of Gharbadi cultivation. In it is also documented, experiences of chemical free vegetable cultivation of marginal women farmers of Karlamunda. The Gharbadi cultivation is also an integrated attempt to engage women and youth in preparing household crop plans and produce safe food and seeds, thereby gradually enlisting newer generations to contribute more to more food crops instead of industrial cash crops.

We hope that the information in this booklet will be useful to the farmers, grassroots development practitioners, school management committee, and line department in rainfed areas.

FOREWORD

The initiative which began as a pilot is now an integral part of the households in the 20 villages in Karlmunda. I wish to thank my colleagues for making this possible:

Amar Kumar Gouda, Programme Officer, for planning and executing the community-led initiative involving women farmers, youth, and line department on food and nutrition security through various mapping processes.

Pradip Kumar Sahu and **Jagadish Prasad Rana**, Community Mobilizers for on field support and documentation of Planning-Reflection – Action- Production process.

Gunjan Kakkar, Communications Officer for the Booklet Design

Thanks to the women Gharbadi farmers, Village Development Committee, Agriculture, Horticulture, and ICDS officials for generous sharing from their experiences.

In Solidarity,
Sukanya Chatterjee,
Regional Manager,
East IGSSS

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INTRODUCTION

Karlamunda is a remote block in Kalahandi district, Odisha. Like much of the district, Karlamunda has a long history of drought. In recent years, the severity and frequency of extreme events have risen sharply. Problems in germination, poor harvest, pest attack, crop disease outbreak, crop loss have led to severe agrarian crisis.

IGSSS is implementing the CRAFT-K project in 20 villages of Karlamunda is promoting climate resilient farming to address the high levels of food and nutrition insecurity.

Challenges

Marginal farmers have to resort to increasing amounts of chemical fertilizers to produce a decreasing amount of mostly (rain fed) harvest. Substantial number of farmers have been induced to take up highly expensive cash crops (mainly cotton) increasing their indebtedness.

The shift to non-food cash crop has adversely impacted food crop as well as natural farm biodiversity resulting in increased market dependency.

Inspiring to change

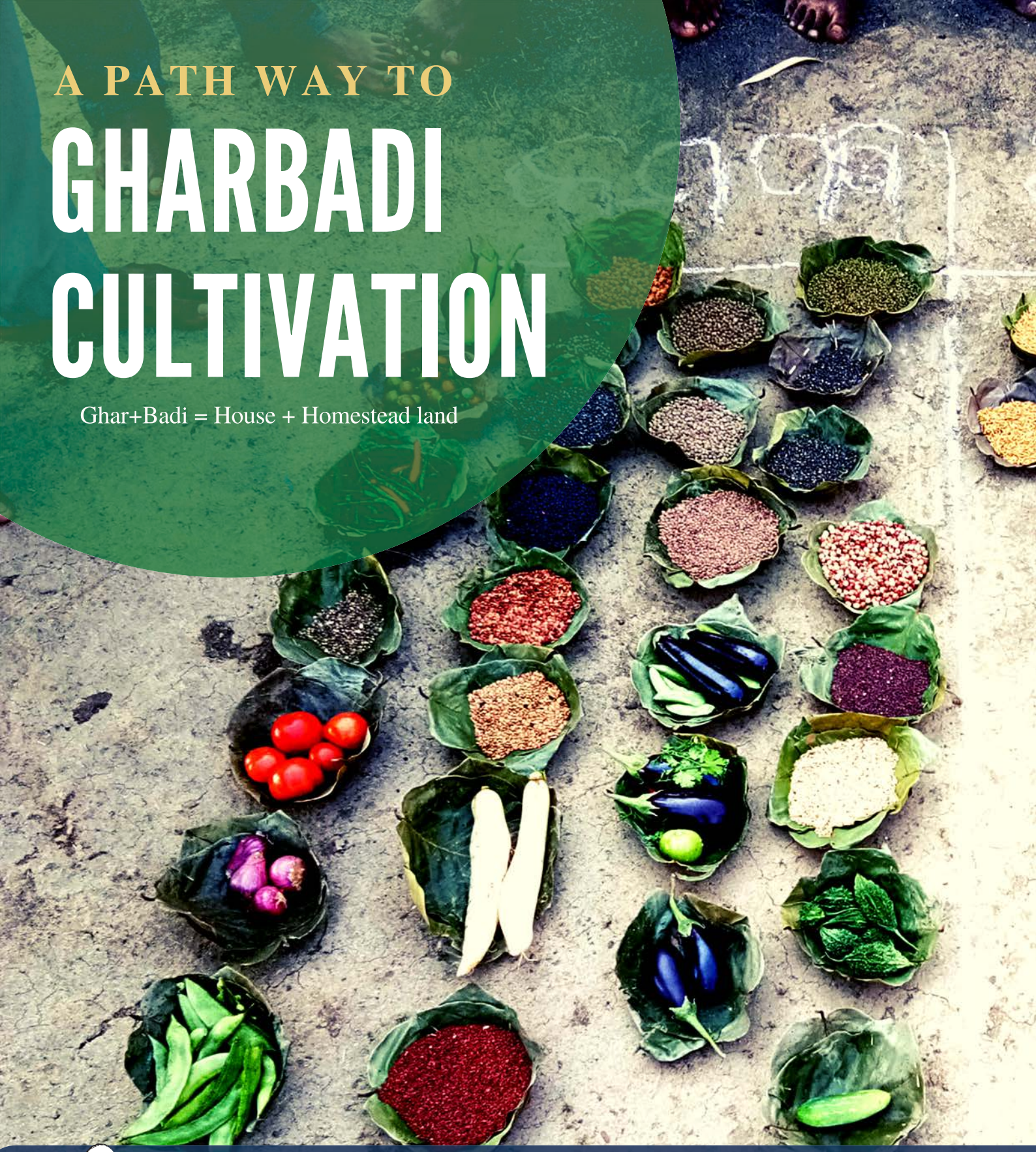
Problems in germination, poor harvest pest attack, crop disease outbreak, crop loss have led to severe agrarian crisis

IGSSS through the CRAFT-K project supported 200 women across project villages to undertake introduced Gharbadi cultivation in Homestead land to produce and consume clean, green, safe and nutrition vegetables for round the year.

A PATH WAY TO

GHARBADI CULTIVATION

Ghar+Badi = House + Homestead land



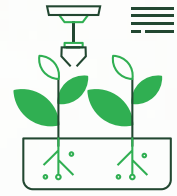
To address the high levels of food & nutrition insecurity, The CRAFT K project introduced the concept of Gharbadi Cultivation.

After one year of Gharbadi Cultivation: The 200 women who have been part of the campaign have easily adapted a variety of leafy vegetables, grown without any chemical fertilizer. This has improved daily intake of their families.

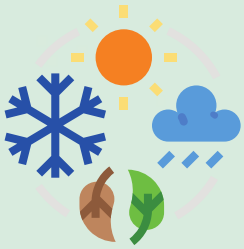
+200

WOMEN BENEFITED IN ONE YEAR

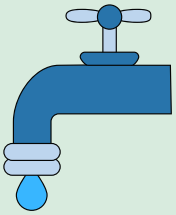
Initiated in 2017, when only 5-7 types of vegetables where grown; now up to 24 types are grown in more than 50 kitchen gardens. 200 kitchen gardens covering 3.5 acres of gharbadi land have produced round the year vegetables in the CRAFT-K project villages. In the nutritious vegetable gharbadi farming, papaya, lemon, drumstick & pomegranate plants have been planted.



Harvesting Happiness



Systematic production of multiple varieties of nutritious vegetable in s**mall plots in both summer & winter.**

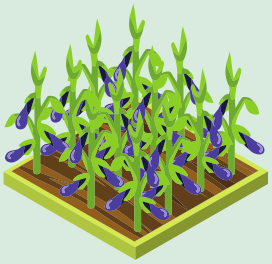


Promotes the usage **domestic waste water.**

Seed conservation to reduce dependency of the market

Involving women and youths in household **crop selection, seed conservation & farming.**

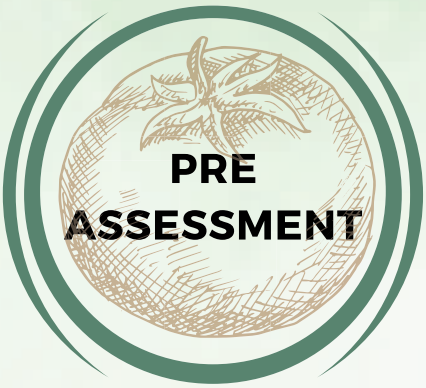
Produces and fresh vegetables without using any **chemical pesticides or fertilizers; conserves farm friendly insects.**



THE 10 STEPS

The process of Gharbadi Cultivation

1



Vegetable production assessment in Village Development Committee (VDC) & SHG meetings

2

Training and knowledge sharing meetings on season wise vegetable production.

3

Preparation of vegetable production plan as per household requirement & interest.

4

Types of soil, soil health,insect & pest, diseases, month wise climate stress & seed status assessment in VDC & SHG meetings

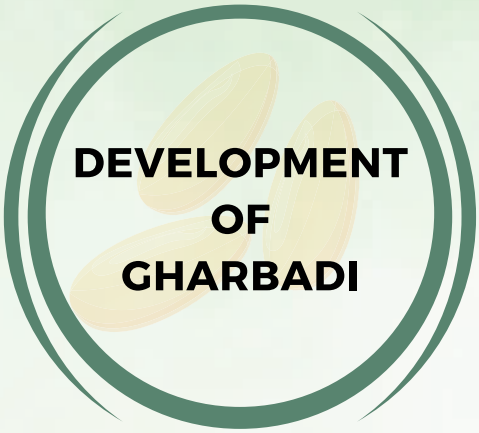
5

Mobilizing support from local Agriculture and Horticulture Departments for technical knowledge and natural way of pest control.


ମାଟି ସମ୍ବଳ


ପାରମ୍ପରିକ ବିହନ ଓ ଖାଦ୍ୟ ମେଳା
Traditional Seed and Food Festival
Agadhupur | Karlamunda Block of Kalahandi District, Odisha
24th & 25th February 2019
Organised by:
igsss

6



Seed collection, seed exchange, preparation of saplings, sapling distribution & preparation of gharbadi as per geographical location of the land

Crop protection- Supply of varietal indigenous seeds, vermin compost tank for production of vermin compost, mud pot for production of bio-pesticide to 200 families & low cost drip irrigation kits to 100 poorest families.

7

8

Planning for harvesting of vegetables even in summer season from at least 50 vegetable plants.

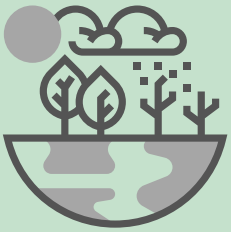
Farmers knowledge exchange meeting, farm visit, production, consumption assessment in VDC meeting & sharing of success stories

9

10

Participation in various fairs for exchange of knowledge and skill on production of vegetables with little piece of land and little amount of water.


VEGETABLE SAPLING
PRODUCTION ASSESSMENT



Stories of Change

Mamta Bhoi

Dhanarakhaman Village

A story of Hope and Inspiration

Mamata is an adivasi woman from Dhanrakhaman village, Kalahandi. Her husband earns an irregular income as a tractor driver and has to supplement as a mason. They own half acre of land and Mamata grows paddy in it and earn Rs. 6000/- to Rs. 8000/-. They cannot afford vegetables from the market.

The village development committee tasked with identifying participants for a project based training on Gharbari cultivation, chose Mamata along with other marginal and landless families.

Mamata learnt about producing multiple varieties of crops in each season on a small plot using very little water. She also developed her family's annual vegetable requirement and production calendar. Her family of 4 needs 500 kg of vegetables, calculated at 1200 gm per person per day. She would have to spend Rs. 15,000/- annually on this at Rs. 30/- average spend per person, per day, per week.

Mamata calculated that by growing vegetables in Gharbari, she would save Rs. 12,000/- annually and also her family would get fresh, chemical free vegetables. Mamata has cultivated 15 types of vegetables and varietal leafy vegetables in her small (300 Sq ft) backyard plot. By portioning her small plot into 7 smaller plot, she is cultivating 4 types of leafy vegetables, each plot producing 500 grams of leafy vegetables per week.

2 papaya and 2 ivy gourds planted close to where Mamata washes her household utensils now give 4-5 kg of fruit every fortnight. She has got Brinjal 47 kg, Tomato 58 kg, Chili 6 kg, Ladies fingers 28 kg, Leafy vegetables 30 kg, French beans 3 kg, Cucumber 14 kg, Pumpkin 70 kg, Bottle gourd 90 kg, Broad beans 15 kg, Onion 19 kg, Radish 8 kg and Papaya 45 kg from kitchen garden. 70 KG pumpkin from 4 plants on the roof top of the house.

Earlier she threw away vegetable peels, rice starch and kitchen water. Now she uses these to produce compost. This year, Mamata applied 150 KG of vermin compost produced from vermin tank in paddy field, hence saving Rs. 3500 that she would have paid to for chemical fertilizer. In a single year she has stored 6 types of indigenous seeds. Mamata says vegetables can be obtained round the year from even a small piece of land. The taste of green and safe vegetables is different. This not only makes farmer economically strong but make stand as self-reliant farmer.

There Initially Mamata had serious doubts that her 300 square feet plot, one vermin, one small bucket along with some drip irrigation pipes and indigenous seeds could provide her 5 to 7 KG vegetables per week throughout the year and vermin compost.

200

WOMEN

20

PROJECTS

"200 other women like Mamata, of the 20 project villages of Karlamunda block have been able to eat varietal safe food in their daily food plates by cultivating vegetables in little piece of gharbadi land using little amount of water. This small initiative is now moving towards organic farming along with seed sovereignty"

- Sri Anirudha Putel, President, Village Development Committee

"The dry period begins from February and this year, I picked 6 types of safe and nutritious vegetables from my kitchen garden, I have now resolved to produce more variety of vegetables by using every inch of my home yard"

MAMATA BHOI, DHANARAKHAMAN VILLAGE

Mamata Bhoi, Dhanrakhaman Village

SIZE OF GHARBADI- 300 SQ FT.

Mamata Bhoi (Dhanrakhaman), Size of Gharbadi- 300 SqFt

S. No		Kharif Season (July- October)			Rabi Season (November- March)			Summer Season (April- June)			Total Vegetables Production in kg
	Vegetable	Nos	Production (kg)	Total Savings	Nos	Production (kg)	Total Savings	Nos	Production (kg)	Total Savings	
1	Brinjal	10	12	360	10	20	600	10	15	450	47
2	Tomato	20	8	320	20	40	1600	10	10	400	58
3	Chilli	10	2	100	10	2	120	10	2	160	6
4	Ladies fingers	20	6	180	20	20	600	10	2	80	28
5	Leafy Vegetables	Mixed	6	240	Mixed	5	200	Mixed	4	160	15
6	Leafy Vegetables	Mixed	6	240	Mixed	5	200	Mixed	4	160	15
7	French beans	10	0	0	10	3	120	0	0	0	3
8	Cucumber	4	6	120	4	4	80	4	4	40	14
9	Pumpkin	4	50	1500	4	0	0	4	20	600	70
10	Bottle Gourd	4	50	750	4	20	300	4	20	200	90
11	Broad beans	20	0	0	20	15	450	0	0	0	15
12	Long-Beans	20	6	240	20	4	160	20	2	80	12
13	Onion & Onion stalks	50	5	100	50	8	160	50	6	180	19
14	Radish	30	4	80	30	4	80	0	0	0	8
15	Papaya	2	0	0	0	25	500	0	20	400	45
Season wise total production			**161**	**4230**		**175**	**5170**		**109**	**2910**	**445**
Total Days			**123**			**151**			**91**		

Maitri Bhoi

Terekela Village

A ray of light to change & inspire

Maitri lives with her family of 6 in Terekela Village. She owns 1 acre of upland and cultivates only rain fed paddy. She buys vegetables for her family from local haat.

The Village Development Committee supported Maitri with some vegetables seeds in 2018. She also learnt about growing vegetable in small plots and using less water organised by the VDCs. In the seed and food fair in 2019, she participated in the seed exchange and grew them on 450 sq ft. gharbadi. To protect her saplings from hen, she covered them with mosquito nets.

Gharbadi farming was not new to her. In rainy season she grew broad bean, long bean, brinjal and tomato. But this was not systematic. She planted the seeds in a scattered way, all seeds together. So she had vegetables for one time only, mainly July to October. For rest of the period, she would have to feed her family with vegetables bought at the local haat.

She did not consider the geographical location of the land, was it in sunlight or in shade or how to plan for fullest use of the land, fencing of the plants in the gharbadi, house roof and plotting the land. She learnt about choosing crops to suit the geographical lay of her plot, the sunlight and shade it received. She learn how to use all available area, not only her small plot but also the roof of her home. She also learnt how to use household waste water to irrigate her gharbadi.

Maitri has now grown 14 types of vegetables in a planned manner which uses every inch of available land. She is now getting 1-2 kg vegetables daily for her families' consumption. She is now able to store four types of vegetable seeds.

She calculates that the planned Gharbadi cultivation has helped her save Rs 8-10,000/- as she no longer has to buy vegetables from the market. In the next seed festival, she will exchange seeds with 10 farmers. She has resolved to train 10 other women about the significance of gharbadi and help them adopt it.

It was a dream for poor family like mine to eat green vegetables in summer season. My children are getting tomato to eat round the year. Plucking tomato from home yard and the taste of eating with green chilli is different"

MATRI BHOI, TEREKELA VILLAGE

Maitri Bhoi, Terekela Village

SIZE OF GHARBADI- 400 SQ FT.

Maitri Bhoi, Terekela, Size of Gharbadi- 400 SqFt

S. No		Kharif Season (July- October)			Rabi Season (November- March)			Summer Season (April- June)			Total Vegetables Production in kg
	Vegetable	Nos	Production (kg)	Total Savings	Nos	Production (kg)	Total Savings	Nos	Production (kg)	Total Savings	
1	Brinjal	30	22	660	20	12	360	10	6	180	40
2	Tamato	30	25	1000	30	15	600	10	8	320	48
3	Chilli	10	2	100	10	2	120	10	2	160	6
4	Leafy Vegetables	Mixed	8	320	Mixed	6	240	Mixed	4	160	18
5	Leafy Vegetables	Mixed	8	320	Mixed	6	240	Mixed	4	160	18
6	Cucumber	6	8	160	4	6	120	4	2	20	16
7	Bitter gourd	6	8	320	4	2	80	4	2	8	12
8	Pumpkin	4	80	2400	4	0	0	4	50	1500	130
9	Bottle Gourd	4	60	900	0	0	0	4	60	600	120
10	Ridge gourd	8	12	360	4	8	240	4	2	60	22
11	Broad beans	30	0	0	30	25	750	0	0	0	25
12	Onion & Onion stalks	50	6	120	50	8	160	50	4	120	18
13	Radish	30	6	120	30	5	100	0	0	0	11
14	Papaya	2	0	0	0	40	800	0	30	600	70
Season wise total production			**245**	**6780**		**135**	**3810**		**174**	**3888**	**554**
Total Days			**123**			**151**			**91**		

Jayanti Bhoi

Kansil Village

A bright example of self-reliance farmer

Jayanti has a spacious gharbadi of 5000 sq ft. Three years ago she had planted a few fruit bearing plants in her home yard. In rainy season, she would cultivate brinjal, tomato and leafy vegetables. They also grew paddy in 2 acre of agricultural land. Jagannath also thought of giving up paddy due to high production costs and shift to cotton cultivation and spoke to a few cotton input traders. It was at this time, Jayanti learnt about producing vegetables in a systematic way in Gharbadi.

Jayanti's family's daily intake was 800-1500 gram vegetables which costs Rs. 50/- to Rs. 60/- as per market price or a weekly expenditure of Rs. 350-400/-. Since vegetables were scarce in her village, she had to buy them from the market. Further she did not have storage facilities so these vegetables wouldn't last for seven days so she had to buy small quantities only.

With the learnings from project training, Jayanti prepared a crop cultivation plan of mixed cropping to produce more crops with little land & water, and climate resilient farming practices. Jayanti and Jagannath after assessment of their food requirement initiated vegetable cultivating for round the year production with seed support received from the project.

Now Jayanti is cultivating 21 types of vegetables and 7 types of flowers jointly with husband Jagannath. They have prepared 8 types of bio pesticide, 3 types of hormones and 3 types of composts and having applied in own field, they have become able to share their experience on their use and benefit among farmers.

Jayanti now has 8 types of indigenous seeds. Her husband Jagannath has dropped the idea of cotton cultivation and now has cultivated green gram, black gram, beans after harvesting of paddy in addition to Arhar cultivation in the farm bund. In 18 months, Jayanti has transformed her Home yard into a farmer's field school. 15 farmers of the nearby villages have learnt the experiences and knowledge of Jayanti and Jagannath.

Jayanti says that every farmer should produce and conserve seeds, organic compost and natural bio pesticides in home yard to become self-reliant.

18

MONTHS

8

TYPES OF INDIGENOUS SEEDS

“Every farmer should produce and conserve seeds, organic compost and natural bio pesticides in home yard to become self-reliant"

- JAYANTI BHOI, KANSIL VILLAGE & AND THE SECRETARY OF ADIVASI SHG

Jayanti Bhoi, Kansil Village

SIZE OF GHARBADI- 5000 SQ FT.

Jayanti Bhoi, Kansil (Size of Gharbadi, 5000 Sqft)

S. No	Kharif Season (July- October)				Rabi Season (November- March)			Summer Season (April- June)			Total Vegetable Production in kg
	Vegetable	Nos	Production (kg)	Total Savings	Nos	Production (kg)	Total Savings	Nos	Production (kg)	Total Savings	
1	Brinjal	100	70	2100	80	38	1140	60	44	1320	152
2	Tomato	150	60	2400	60	55	2200	40	18	720	133
3	Chilli	300	12	600	250	8	480	200	5	400	25
4	Ladies fingers	150	24	720	80	12	420	50	8	280	44
5	Leafy Vegetables	Mixed	10	400	Mixed	10	400	Mixed	8	320	28
6	Leafy Vegetables	Mixed	10	400	Mixed	10	400	Mixed	8	320	28
7	Cauliflower	50	25	750	30	12	360	0	0	0	37
8	French beans	80	20	800	50	8	320	50	6	240	34
9	Cucumber	20	12	240	10	6	120	8	3	30	21
10	Bitter gourd	20	8	320	5	2	80	4	2	8	12
11	Pumpkin	12	80	2400	0	0	0	10	80	2400	160
12	Bottle Gourd	4	60	900	0	0	0	6	60	600	120
13	Ridge gourd	6	4	120	4	3	90	4	2	60	9
14	Broad beans	30	0	0	30	25	750	0	0	0	25
15	Tubers	100	0	0	100	50	1000	0	0	0	50
16	Onion & Onion stalks	200	6	120	0	0	0	200	4	120	10
17	Radish	100	8	160	100	6	120	0	0	0	14
18	Drumstick	1	0	0	0	6	180	0	0	0	6
19	Papaya	4	0	0	0	80	1600	0	60	1200	140
20	Banana	2	0	0		10	200	0	6	120	16
21	Lemon	2	5	250							
Season wise total production			**414**	**12680**		**341**	**9860**		**314**	**8138**	**1064**
Total Days			**123**			**151**			**91**		

Mamata Bhoi

Bijapati Village

Spreading Happiness

Mamata lives with her family of 5 in Bijapati. In the rainy season, she grows paddy in 1.5 acres of land and broad bean, pumpkin, bitter gourd and brinjal in 800 Sq. Ft size gharbadi. In rabi season she cultivates green gram and pulses in 0.5 acre of land.

For the remaining 8 to 10 months, she buys from local weekly haat and mobile vendors, an expense of Rs. 12 to 14 thousand. As she does not always have cash in hand, she cannot buy vegetables regularly or in sufficient quantities as it is expensive.

Mamata learnt about cultivating multiple crops in a single plot and organic farming in a knowledge sharing session. Mamata decided to develop vegetable saplings taking the members of her Self Help Group in 600 sq ft. The VDC supported the group with seeds & they grew 10,000 vegetable saplings of 8 varieties on 18 beds/ plots. The VDC supplied seeds for collective vegetable sapling development and a nursery, from project support.

Mamata is thankful to VDC and Ratnamohini SHG of the village for the success for involving her in the campaign for cultivating nutritious food in gharbadi.

"Due to this small effort Mamata has saved Rs. 12000 to Rs.15000 towards the spending of buying vegetables and learnt to control pests in organic way. This small initiative has made available off season vegetables in our village,"

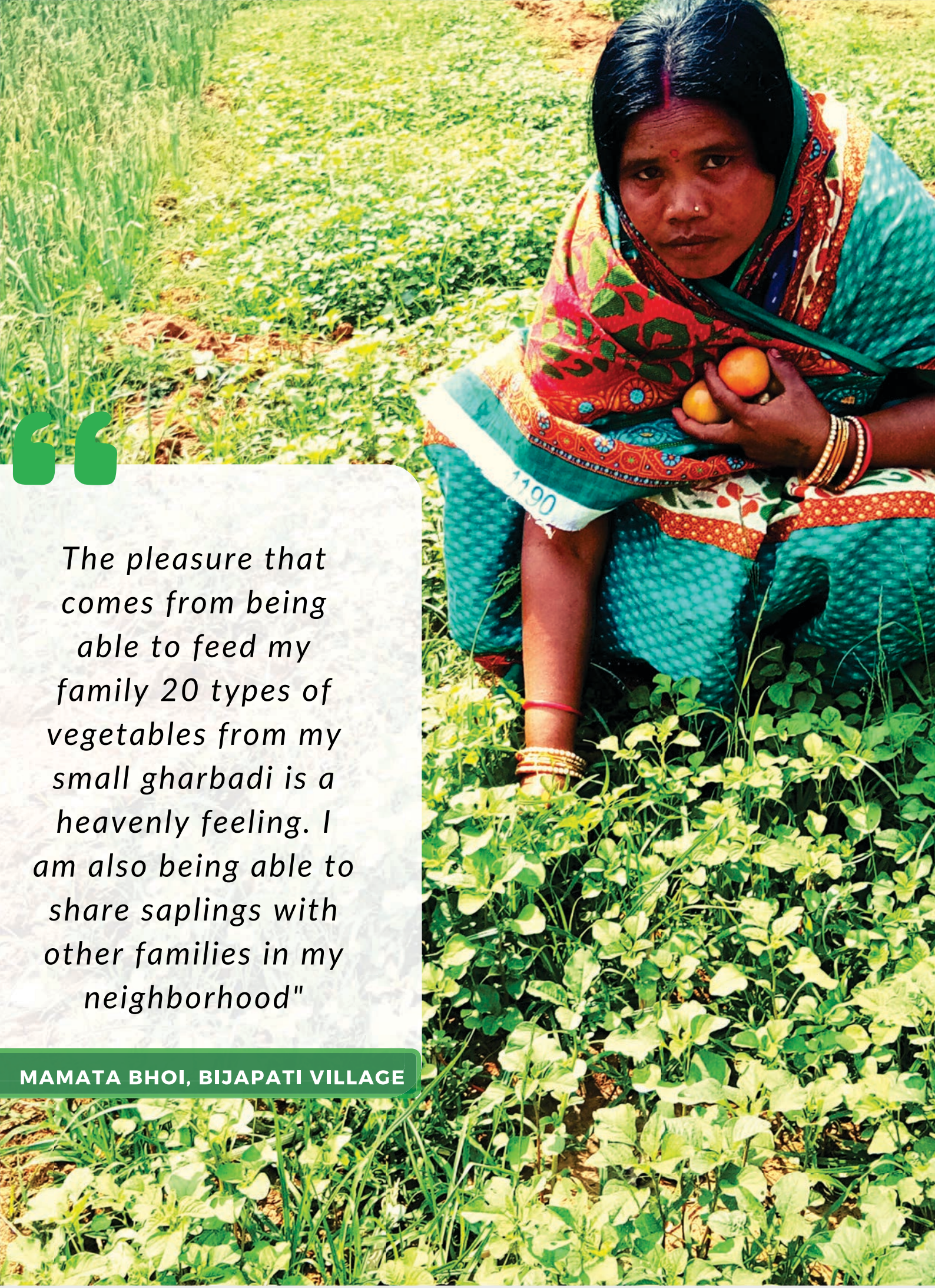
-Bhupen Choudhury, President, Village Development Committee.

20

Sapling Development Benefited

8-20 Vegetables

20 Vegetables



The pleasure that comes from being able to feed my family 20 types of vegetables from my small gharbadi is a heavenly feeling. I am also being able to share saplings with other families in my neighborhood"

MAMATA BHOI, BIJAPATI VILLAGE

Mamata Bhoi, Bijapati Village

SIZE OF GHARBADI- 800 SQ FT.

Mamata Bhoi, Bijapati, Size of Gharbadi- 800 SqFt

S. No	Kharif Season (July- October)				Rabi Season (November- March)			Summer Season (April- June)			Total Vegetables Production in kg
	Vegetable	Nos	Production (kg)	Total Savings	Nos	Production (kg)	Total Savings	Nos	Production (kg)	Total Savings	
1	Brinjal	30	28	840	20	12	360	14	8	240	48
2	Tamato	30	22	880	18	10	400	20	12	480	44
3	Chilli	40	6	300	40	4	240	30	3	240	13
4	Ladies fingers	50	8	240	30	6	180	0	0	0	14
5	Leafy Vegetables	Mixed	8	320	Mixed	5	200	Mixed	4	160	17
6	Leafy Vegetables	Mixed	8	320	Mixed	5	200	Mixed	4	160	17
7	Cauliflower	10	8	240	15	8	240	0	0	0	16
8	French beans	10	0	0	10	3	120	0	0	0	3
9	Cucumber	6	8	160	6	4	80	4	3	30	15
10	Bitter gourd	6	6	240	5	3	120	4	2	8	11
11	Pumpkin	8	80	2400	0	0	0	6	40	1200	120
12	Bottle Gourd	6	60	900	0	0	0	6	30	300	90
13	Ridge gourd	6	4	120	8	6	180	4	2	60	12
14	Broad beans	20	0	0	20	15	450	0	0	0	15
15	Tubers	100	0	0	100	50	1000	0	0	0	50
16	Onion & Onion stalks	300	8	160	0	0	0	500	12	360	20
17	Radish	50	6	120	50	4	80	0	0	0	10
18	Drumstick	1	0	0	0	5	150	0	0	0	5
19	Papaya	2	0	0	0	40	800	0	20	400	60
20	Banana	2	0	0		12	240	0	8	160	20
Season wise total production			**260**	**7240**		**192**	**5040**		**148**	**3798**	**600**
Total Days			**123**			**151**			**91**		

GHARBADI RESPONDING THE COVID-19 PANDEMIC

The whole country has come to a standstill in the wake of the COVID-19 threats. India has extended national lock-down. During the lock-down situation most of the people face scarcity of fresh and nutritious vegetables in their daily food plate.

In wake of the COVID Pandemic and the ensuing lock-down has created challenges in access to food. The marginal rural households have been greatly affected. Proactively contributing to the situations, kitchen garden with its growing importance provides nutritious food even during the lock-down period.-

Even in this crisis 200 women farmers of Karlamunda block have vegetables in their gharbadi. Starting in December, the women completed land preparations activities and prepared vegetable saplings nursery for summer season cultivation. In result from the first week of February, all the kitchen Gardens are producing a variety of vegetables.

During the lock-down period all the kitchen garden holders have consumed 50% vegetables as per their family needs and reserved seeds & food during the scarcity period. Apart from these kitchen garden holders have shared their vegetables to the neighborhoods and relatives' scarcity periods.