



## Report on State Level Workshop on Sustainable Sugarcane Initiative



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Organised by:

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The role of Sugarcane in boosting the rural economy of a household is well accepted. However, the production of sugarcane is losing its place of prominence in the farmer's field. The main reason of its decline is the reduction in returns per unit area of sugarcane, inspite of its increased rate. Moreover the increase input costs and the low yield of sugarcane per acre insists the farmers to take onto sugarcane farming as less important. The low sugarcane recovery initiates the factories to pay less to the farmers thereby adding to their miseries. In this background, Nirman intervned in SSI in three districts of Odisha of Nayagarh ,Ganjam, Bargada disrict to enable farmers to the Sustainable Sugarcane Initiative(SSi). The new practise not only increased the sucrose content of the sugarcane but also required less seeds,less water and organic manures which instantaneously solved all the problems of the sugarcane farmers.

A State level workshop on Sustainable Sugarcane Initiative(SSi)is conducted by Nirman every year to motivate the farmers for adopting SSI way of sugarcane farming, creating general awareness among them of using organic fertilisers,using less seeds,less water,less pesticides and increasing the production level of sugarcane and create supportive environment for promotion of SSI.In par with the chain a similar workshop was successfully carried on by Nirman on January 10<sup>th</sup>2014 at CYSD in Bhubaneshwar.The main objective of the workshop was to develop a mass awareness on SSI through continuous interactions with govt. and farmers from the state,experience sharing of the framers,experts advise of optimizing the production of sugarcane by adhering to organic manures,innovative ideas of protecting the crops under various climatic calamities,involving women participation into the procedure and establishing SSI a sustainable farming practice.

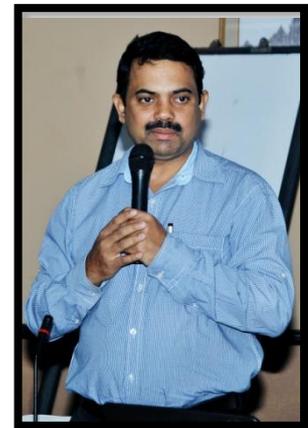
Among the invitees were,Prof.Radhamohan, eminent Environmentalists and former information commissioner;Dr. Ambika Prasad Nanda,State Program Officer-UNDP;Mr.Sudhanshu Bhusan Mishra,IAS, Dr.P.K.Nayak,Agriculture Scientist,Sugarcane Research station,Panipolia,Nayagarh;Dr.Minakshi Mohanty,Agriculture Scientist,Sugarcane Research Station,Panipoila,Nayagarh;and farmers from Rayagarh,Nayagarh,Ganjam, Bargadaetc.who exchanged their thoughts on the system of SSI and accepted this to be a highly successful method of sugarcane farming.

### **Background:**

Nirman has played an important role by introducing latest technological and innovative ideas of Sugarcane farming to the farmers of different districts of Odisha like Nayagarh, Bargarh,Ganjam,etc.The journey in last three years, since the inception of SSI procedure,has increased from 1 district to 4 districts,20 farmers to 400 farmers and 4 acres of land to 425 acres of land and yet there is much more to be done.In this backdrop,this workshop aimed at consultation among the CSOs,NGOs,Govt. Officials,farmers,agricultural scientist,to facilitate engagement with govt.in effective implementation of SSI practiceand giving the farmers sustainable agricultural practise and eco-friendly environment.

The inaugural programme started with warm welcome by Mr.Prasant Mohanty,Executive Director of Nirman.He threw a warm welcome to the honourable guests,farmers and his co-partners to present their outlook on SSI.

Mr. Prasant Mohanty in his opening speech introduced everyone with the system of SSI. He conveyed the message SSI “More with Less”. He showcased the main problems of the sugarcane farmers as rising cost of cultivation,depleting water level,unavailability of good quality of seed,increased use of chemical fertilisers etc.In his presentation he showcased the importance of SSI system of Sugarcane cultivation as compared to the traditional method.Sugarcane is grown in 103 countries.It accounts for 60 to 70% of sugar production but unfortunately there are social,economical and environmental hindrances in its widespread cultivation.Low sugar recovery found in sugar industry.Sugar mills lack long term perspective.Both the farmers and the mills are in need of alternative means of high yielding production system.According to Mr.Prasant Mohanty SSI has the potential to take sugarcane farming way ahead.



He stated that SSI is an innovative agronomic set of practises to increase the cane yields significantly. The following advantages can be acquired by following the SSI practise:

- a. Less seeds
- b. Raising of nursery
- c. 40%less water
- d. Encourages inter-cropping
- e. Promotes organic manure practises
- f. Eco-friendly
- g. Reduces cultivation costs
- h. Improves the productivity.

2009-13: SSI in Odisha with Agsri

	Horizontal expansion of SSI				
	2009	2010	2011	2012	2013
District	1	3	3	5	5
Block	1	5	10	16	20
Panchayat	2	6	25	43	48
Village	7	17	40	81	89
Farmers	20	56	365	610	705
Acre(s)	4	29.73	205	350	425

Type of Farmers covered during Intervention					
Farmer Category	Medium farmers	Small farmers	Marginal Farmers	Landless Farmers	Share croppers
% of Farmers in 2012	4	8	63	25	58
% of Farmers in 2013	2	31	57	10	55

In his 20 minutes deliberation he showed us how buds are planted in trays,the use of coco-pits for raising the settlings,transplantation of young seeds to the fields,the machineries used for chipping the buds etc. Emphasis on sufficient moisture is given in SSI system rather than inundating the field with water as used in traditional system.This saves 40% of the water used.Furrow irrigation also helps in reducing the quantity of water used.SSI facilitates the organic methods of cultivation.Inorganic practises like application of chemical fertilizers,pesticides and germicides are discouraged.The use of organic manures,bio-fertilisers and use of bio-control measures etc. are promoted instead. It also encourages better and timely cultural practises like earthing up, propping, de-thrashing etc. SSI also makes scopes for inter-cropping for optimum utilization of land.Crops like wheat, potato,cow-pea,French bean,chickpea,water melon,brinjal etc.are grown as inter crops for

additional food security to the farmers. The SSI practise not only acts as live mulch but also preserve moisture and improves the fertility of the soil.

Benefits of SSI system for the sugarcane factories:

Seed materials are reduced from 4 tons to ½ quintal per acre which helps more cane for crushing. Good varieties of sugarcane are propagated using less seed thereby saving both cane and money. Increased yield enable factories running longer and improving its revenues.

Benefits of SSI system for the farmers:

The farmers require less seeds in comparison to the traditional method. The system enforces easy transplantation and inter-cultivation practises for farmers. More numbers of millable canes are produced. With this practice, the individual weight and height of the sugarcane is also increased. The raise of nursery adds to income generating activities thereby implicating employment opportunities for women. Ultimately the net profit is increased making cane cultivation viable.

Overall benefits:

In last, Mr.Prasant Mohanty highlighted that the SSI practice has a better accessibility of producing more germinating sugarcane percentage thereby increasing the yields and providing crop security,the inclusion of organic way of farming makes the sugarcane more nutritious,this automatically saves the expanses on water and electricity. Thus, the SSI system incorporates multiple benefits not only to the farmers but also to the sugar mills. A considerable reduction in the cost of cultivation is noticed and also there are provisions for extra income from intercrops.

SSI was introduced by Nirman as a low input based farming practice for livelihood enhancement of small and marginal farmers in 3 districts of Odisha (Nayagarh,Ganjam and Bargada) covering 604 farmers adopting with 324acres of land in the year 2012-13. The average yield comes around 42 to 60 ton per acre (105- 150 ton per hectare) in SSI where as farmers used to get 30-40 ton per acre (75-100 ton per hectare) in traditional sugarcane method. Thus a substantial increased yield through SSI system is seen. The other gain is 90 % reduction in seed cost, 50% cost reduction in earthing up, 80% cost reduction in propping up and 25% cost reduction in harvest. Around 20 % farmers have undertaken vegetable as intercrop and reaped the bonus.

## benefits experienced...

Particulars	Conventional	SSI
Seed	76,800 nodes Rs 14400/-	5,600-6,500 buds Rs 1300/-
Water	24 hrs/day for 4 days: 8 times in a crop cycle	8 hrs/day for 3 days: 4 times in a crop cycle
Labour (including irrigation)	1190 person-days/ 1776 hrs in a crop cycle	136 person-days / 648 hrs
Per Acre Cost	Rs 21,244/-	Rs 7200/-
Intercropping	Nil	Possible (Bonus for Farmer)

Ramesh Chandra Nayak, Program Coordinator of Nirman in his presentation compared the production of sugar between India and Brazil. In comparison to Brazil, the sugarcane production of India has increased as provided by the last two years data. In sugarcane farming, the cost of cultivation per acre land costs around 40 to 50 thousands rupees, which is becoming deterrent for the farmers. The farmers are getting demotivated furthermore because of the low prices that they get by selling them. He said that in this system of SSI less water, less seed, less or no requirement of chemical fertilisers is involved which in turn is very affordable for the farmers. The principles on which SSI system rests are as given below:



1. Raising a bud chip nursery in cavity trays in place of raised beds.
2. Growing the seedlings under a shade net for better survival and growth.
3. Planting seedlings with an age of 30 days or less.
4. Planting the seedlings under wider spacing (4 ft. or more between rows and 2 ft. within row); allowing for copious exposure to sunlight results in high and synchronous tillering and good plant growth.
5. Emphasising water-saving methods, including drip irrigation.
6. Encouraging greater use of organic inputs for better soil fertility and structure.
7. Advocating intercrops to suppress weeds as well as to provide intermittent income to farmers.



## Basic Principles of SSI

1. Raising nursery using single budded chips
2. Transplanting young seedlings (25-35 days old)
3. Maintaining wider spacing (5X2 ft) in the main field
4. Avoiding inundation of water and providing sufficient moisture
5. Encouraging organic method of nutrient and plant protection measures
6. Practicing intercropping with effective utilization of land



### 2-3 Budded sets & Bud chip

- 2-3 budded sets are normally used for propagation
- In SSI, single budded chips from 7-9 months old healthy canes used



### Young seedling from Nursery

- Buds are planted in trays
- Coco-pith (coconut coir waste) used for raising the settlings
- Transplanting of young (25-35 days old) seedlings



“Sustainable Sugarcane initiative” is inspired by SRI or the “System of Rice Intensification” and is followed successfully all over India. He presented the diagram of different machineries used in the practises, the procedure of raising nursery, the bud chipping and germinating method, the plantation system etc. Intercrops that are raised in the space between the SSI cultivation accounts for additional income to the farmers. Thus, he focused to the manifold advantages of SSI system of sugarcane farming. He further described the methodological changes that NIRMAL has brought in association with the farmers. The farmers experimented and replaced the use of chemical fertilisers by adopting the use of raw coco-pith, FYM and Vermicompost as manures which in turn has reduced their extravagant expenses on chemical fertilisers.



Mr. Sudhanshu Bhusan Mishra, IAS retired Chief Secretary, Govt. of Odisha, in his speech shared his concern of improvising the depleting economic condition of the farmers by utilising modern techniques and machineries and optimizing their production. He also gave the reference to the suicides committed by the farmers due to insufficient low production, high input costs and negligible or no profit outcome. He showed his concern for stabilizing the production of sugarcane so that farmers can have a sustainable way of farming. He laid particular importance to the sugarcane factories as they are the backbone of the India's economy. India is the second largest manufacturer of sugar next to Brazil. He referred to the economic development in Maharashtra which the combined effort of sugarcane and sugarcane factories had brought to the state. The sugarcane mills had opened schools, colleges and hospitals in the state because of the high productivity of sugar. Tamil Nadu and Uttar Pradesh had also seen similar development in the field of sugar and sugarcane production. He accessed the depleting number of sugarcane mills in Odisha due to low production of sugarcane. He also showed his concern of stabilising the production of sugarcane under different climatic conditions. Odisha can also avail the advantage by developing Sugarcane factories along with increasing the production of sugarcane. Not only sugar but the hull of sugarcane can also be used for making useful chemicals and alcohol. In Odisha the hull is generally used for making alcohol. Therefore the SSI system of producing "more with less" if adopted and implemented by the farmers of the state can bring considerable changes not only in the production of sugarcane and sugar ultimately, but can also contribute to towards Odisha's economic growth and stability. He emphasised on the improvement of the Sugar mills and to form strong linkage between the farmers and the industrialist. Through SSI system the cost of production can be curtailed to a definite amount and also the yield per acre be increased. It also brings the farmers an additional source of income by inter-cropping. Moreover with the help of this system the sucrose content of the sugarcane is increased which in turn will increase the production of sugar. The organic method of producing sugarcane through the SSI system increases the sucrose content of the cane enhancing its quality and quantity both and is in high demand in all over the world. He suggested that there should be workshops involving both the farmers and the sugarcane factory workers so that the later could get improvised by the improving quality of the sugarcane and the related benefits that SSI brings to the environment, farmers and eventually to the economic progress of the state. He said that this method of farming should be brought into the limelight of the govt. for the up scaling of sugarcane. He assured his support to Nirman by taking necessary initiatives of facilitating discussion with the Commissioner cum Secretary of the State's agricultural Department for promotion of SSI. He opines sugar mills should be established within 20 to 50 kms. of the sugarcane producing areas, so that both the farmers and the mills can work together for overall economic and

livelihood development. He conveyed his thanks to Nirman for their innovative work on farming and livelihood improvement.

Mr. Ambika Prasad Nanda, State Programme Officer UNDP, emphasised the involvement of women in agricultural practices. He asserted that SSI system is the brain child of farmers and they should keep on inventing innovative requested the farmers to come forward and prepare documentation on the different innovative ideas of intensifying production of their crops. Creative ideas should be shared regarding using organic and indigenous manures instead of chemical fertilisers. The ideas should be shared and briefed and proposed in a written form so that serious implementations can be done in the agro-climatic



zone for betterment of the farmers by both the govt. and the non-govt. organisations. Innovative ideas should be shared among the farmers by comprising a farmer's association of preventing crop destructions during famines and floods. He appreciated the influx of young and educated farmers in the agricultural field and taking interest in the latest technologies, inventions and organic approach of farming. Without their contribution agricultural industry cannot get back their domain. In requisition to a farmers question about the problem that occurs between the landlords and the marginal farmers when the remuneration is paid by the govt. in case of natural calamities like Phailin, he said that a



legalized deed of agreement paper for a period of 2,4 or 5 years should be signed between the landowners and the farmers so that during climatic disaster compensations given by the govt. should go to the investor and not to the proprietor. This system of legalized agreement has been recently implemented in Andhra Pradesh and can substantially be followed in Odisha. In his concluding speech, he affirmed that SSI has the potential to ensure improved productivity, more income for the farmers, consuming less water and seed and producing organically grown sugar. He expressed his congratulations towards

the team of Nirman for their constant and consistent support to the farmers.

Eminent Environmentalist and former Information Commissioner Prof. Radhamohan accredited the framers for their indigenous knowledge and experience in agriculture. He said that every farmer should be aware of their strength, capacity, in born excellence in innovative ideas created by them for their crops and soil and should feel proud of themselves and their community. Instead of yearning for sugar they should opt for jaggery because of its health and environmental supremacy. He shared some great ideas of optimising the fields output by adhering to organic procedure one such being "*Homa Farming*". He stated that 75% of the plants and soils nutrition comes from the atmosphere.

But due to the increasing pollution and climatic changes uncertainties has crept in every field of life. *Homa farming* is a procedure through which a fire is prepared in a copper pyramid to synchronise the first ray of the sun during sunset for example to perform *yajna* or *homa*. The first ray of the sun has got a purifying effect on the whole atmosphere. A protective coating of nutritious atmosphere is formed which saves plants from diseases, fungi, pests etc. Plants capacity to breathe increases and the toxic effect of choking to death due to atmospheric toxin is eliminated. *Homa farming* refers to heating fire of which *Agnihotra* is the basis. Chemical fertilisers ruin the soil and the sub-soil beneath which adversely affect crops, production and our health. This practise is a healing procedure for agriculture to produce good organic farming system. By practising this, one can grow maximum yield in minimum agricultural area, soil fertility is improved, water gets purified and atmosphere is replenished. *Agnihotra* further helps in reducing the pollution of the environment thereby reducing the possibilities of cancer. It protects the insects from harming the crops by mutation. Cross breeding among the insects which destroys the crop is duly checked *Agnihotra*. It also protects the atmosphere from radio-active particles and poisonous gases. He shared some enchantments for the farmers and asked them to follow these simple rituals during dawn and dusk. Crops need nitrogen to thrive and grow. In conventional agriculture nitrogen is supplied to the crop by applying chemical fertilizers and manures which are very expensive and unaffordable for farmers. Organic farming does not incorporate the chemical uses of fertilisers and so he shared different innovative to the farmers through which they can utilise the pure nitrogen from the atmosphere and embed it to the crops. There is abundance of nitrogen present in our atmospheric layer which can be captured and applied in the soil with the help of different legumes, cereals bio-fertilisers etc. which in turn reduces the cost of fertilisers used by the farmers.

He also shared different procedures of producing organic manure by using cow horns. After collecting the horns from the slaughter house it needs to be filled with cow dung of a lactating cow which will bring calcium process to the preparations. The horns are then buried in a pit about 16 to 18 inches deep and covered with soil that has been enriched with good quality compost. Special care should be taken to avoid weeds grown on them. The horns are then buried open end down so that it doesn't get water clogged. During the colder months life breathes into the soil and the soil has the tendency to be full growth energies. The pit should be kept cool. The preparation gets ready within six months after which are dug out then. It turns into dark humous and emits a sweet smell. It should be then stored in glass jars or glazed pots. It is stirred for one hour making a vortex or carter in clock wise and anti- clockwise direction. It is sprayed upto four times a year, mostly in the months of October, November, February and March. It is generally applied in the afternoon. It is used in small quantity in the rate of 25 grams in 13 litres of water in one acre land. He also explained the benefits of using vermicompost. Earthworms eat as much matter as their own weight and are capable of producing same amount of manure per day in the form of castings. Castings or excreta of the earthworms are rich in nutrients and

bacterial population. During his deliberation he explained to the farmers of preparing organic manures and adopting organic based farming practices as it is cheaper than chemical fertilisers and also beneficial for both health and environment. He asserted his contentment to the SSI system of sugarcane farming and deliberated his good wishes to Nirman.

Dr.P.K. Nayak, senior scientist from Sugarcane Research Station, Panipola, Naygarah shared his overall view on SSI system of farming practices. In his presentation, he showed the principal methods of Sustainable Sugarcane farming, like raising a nursery using single budded chips, transplanting young seedlings within 25 to 35 days old, maintaining wide spacing in the main field, providing sufficient moisture and avoiding inundation of water, practising inter-cropping for effective utilisation of land invariably high in compare to the



cost of production. He showed a comparative study on the basic differences in the SSI and conventional way of farming. In conventional method, the major drawback lies in the cost of purchasing seeds which is invariably high but by practicing SSI the seeds costs can be drastically reduced up to 75%. Likewise a visible reduction in plant mortality rate is seen in SSI system of farming. This is effectual in increasing the length and width of individual cane and is also convenient for

transplanting young seedlings to longer distance. There is a scope for easy intercultural operations because of wider spacing. He shared a graphical presentation of the requirements of SSI system per acre as compared to the traditional practices:

- a. Bud Chipper (at least 150 buds/ha)
- b. No. Of plastic trays (each with 50 cones)
- c. Coco-pith (150kg)
- d. Vermicompost (50kg)
- e. 500 to 550 no.'s of cane having 10 buds each
- f. Black polythene sheets for covering the trays.

Mr. Nayak has also given the statistical report on the performance details of different types of sugarcane:

## PERFORMANCE DETAILS

SL.NO.	Area ( ha )	Cane yield ( t. / ha )			Cost of cultivation (Rs/ ha)		Redu- ction in cost of Cultivati on (Rs/ ha)	Add. return (Rs/ ha) Over FP
		IP	FP	% gain	IP	FP		
<b>I</b> <b>SABITA</b>	1.0	132	112	17.85	110000	127200	17200	40000
<b>II</b> <b>NEELAMADHAB</b>	1.0	128	106	20.75	116000	132600	16600	44000
<b>III</b> <b>RAGHUNATH</b>	1.0	145	120	20.83	108000	122500	14500	50000
<b>IV</b> <b>NEELACHAKRA</b>	1.0	135	108	25.00	118000	133200	15200	54000

\* Cost of 1 Tone of cane = Rs. 2000/-

**IP: Improved Practice**      **FP: Farmer's Practice**

Dr. Meenakshi Mohanty, Junior agronomist from OUAT of Nayagarh Odisha, exhibited her conviction about SSI farming. She took our attention to the productivity of the sugarcane crop in the state which is 38.73 thousands ha. of the total cultivated areawhich is 0.69 % of total cultivated areas with production of 27.9 thousand tons and productivity of 72 t/ha. The annual sugar requirement in the state is 4.02 lakh tons equivalent to 45.50 lakh tons crushable



by the year 2020. During 2012 only 68.5 thousand tons of sugar was produced by all the six factories of the state, she said. She reflected to the area production and productivity of the crop which is fluctuating due to various constraints which needed to be analysed and addressed through possible management options for sustainable cane production in future prospective. She listed the following reasons which form the major constraints for sugarcane production in Odisha as:

- a. Non availability of location: as sugarcane mostly grows in rich soil so it suffers from both moisture deficit at formative level and excess water at grand growth phase.
- b. The net income from sugarcane is declining because of its high input cost.
- c. It is a labour intensive crop.
- d. Development of irrigational potential is also required for area expansion.
- e. Persistent climatic aberration.

She explained in brief the procedure and process involved in SSI practice and how women can get involved in it. She said that with the help of women nurseries can be raised and buds can be chipped. Thus, there can be a greater involvement of women empowerment in this system giving them equal opportunities like their male counterparts. As a comprehensive study, the SSI system of farming helps in reduction in cost input investments, less water

requirement and there is a scope for drip irrigation, latest mechanism is applicable, there is a considerable reduction in drudgery which facilitates more involvement of farm women. She also showed the basic requirements and the proper procedure of implementing the SSI system. It is evaluated that by adopting the SSI way of sugarcane cultivation there is a 90% reduction in the in the reduction of seed costs. It has also shown a large reduction in plant mortality rate, more malleable cane clump is available and the intercropping facility has provided the farmers with an additional food security. Therefore in her presentation she re assured that the SSI method of sugarcane farming is worth adopting by the farmers in general in odisha, since it is not only high yielding and cost effective in a sustainable manner but also attracts a large number of farm women due to easy to do planting operations involved in it thereby setting an example of women empowerment.

Mr. Natabar Sarangi, renowned organic farmer from Niali, showed his extreme discontentment regarding the widespread use of chemical fertilisers by the farmers. He appreciated the SSI system of sugarcane production which does not procure the exercise of chemical fertilisers which according to him is fatal. In his speech he gave prominence to the SSI system of Sugarcane procedure as it includes no chemical inputs, less seeds, less water, less drudgery and



is also an eco-friendly initiative. He sorted the confusion of some farmers on the acceptance of fully organic procedure of farming by referring to Justin Von Liebig, who was a German Chemist and in his early life advocated the use of chemical fertiliser. In 1840 he in his studies laid stress on inorganic way of using fertilisers. The same person in his later years of his intensive studies admitted that he had committed a crime by acknowledging the inorganic way of farming. In 1860, he understood the importance of humus in plant nutrition and maintained that plants feed upon nitrogen compounds, carbon-di-oxide from air, and some other minerals found in the soil. He was the first person to invent a nitrogen-based fertilizer. Mr. Sarangi, further shared the story of a young American girl called Rachel Carson who in her book "Silent Spring" gave evidences of the lethal effects of chemical fertilisers in the life of different species like fishes, sparrows etc. It was because of her extreme insistence on the prohibition of chemicals used in the farming that the govt. led to a nationwide ban on the use of DDT and other pesticides. He also referred to the increasing number of health hazards among the civilians, spreading of cancer and other related vicious diseases, male and women impotency, increase in the rate of abnormal child birth, etc. as the worst side effects of using chemical fertilisers. Moreover, the nitrous oxide that is formed by the application of synthetic based chemical fertilisers pollutes the atmosphere and has the similar effects on atmosphere as carbon-mono-oxide. These gases add to global warming and causes indefinite harm to human health and atmosphere. He strongly recommended

that organic farming practises are the only way to feed the world through sustainable agriculture. He concluded by assuring the farmers that in years to come there will be no alternative to organic methods of farming and agriculture.



Mr.Natabar Khuntia, well known columnist from Bhubaneswar, unanimously supported the organic practises of farming used in the SSI system. But he focussed his attention to the defective agriculture policies of the govt. He rather said a good teacher recruited by the govt. would have provided the farmer's children towards better education and upbringing. He firmly stood for the unity among the farmers

and requested them to form an association for themselves so that they can raise their voice collectively. It is because of the unorganised way of dealing to their problems that the farmers appeal or questions remains unanswered, he felt. They should work together and form an association so that they can present their inconvenience to their regional officers, district officials and extension officers so that they can have an extended help. He wanted the farmers to raise their voice against the imperative price of their products and default in their marketing systems. Thus, he briefed his speech by fiercely convincing the farmers to organise a "Farmers Association" and cohesively struggle for their miseries and problems.

#### **Farmers Sharing of their Field Experience:**

Nisakara Pradhan, an educated & young farmer from Ganjam district shared his success story of SSI system of sugarcane farming adopted by him since last three years. After his repeated unsuccessful attempt of farming with different crops he diverted his attention to SSI system of farming. With proper guidance and technical training provided to him by Nirman, he started producing "more with less" and became the state level winner of producing sugarcane with advance technology.



He is a proud farmer today and SSI has shown him a new road to success. He shared the principal method of SSI farming and the basic machineries that are involved in it. He said in conventional farming, farmers gets 30 to 32 ton per acre whereas by adopting the SSI system of sugarcane cultivation his cane production has been 40 tons per/acre in the first year of execution and 55 tons per/acre in the second year. In this year also he is expecting a similar rise in production but is worried for the devastation caused by the super cyclone, Phailin to his crops. Still his expectations are high with his crops. He showed his full contentment for the use of organic manure as directed by Nirman which has helped him to retain the fertility of his soil keeping his yield constant. He also exclaimed that the sucrose content of the sugarcane has increased to

22% more in SSI system of farming. The inter-cropping system provided by SSI method has also helped him increase his food security and is an additional source of earning for him. Two main expenses involved in the conventional method of farming were buying seeds and investing on chemical fertilisers is completely curtailed in SSI system. Because of the use of coco-pith, vermicompost, and other organic manures the cost of input has come down to a remarkable extent and as the seeds are replaced by buds of the cane so here too the cost of input has been lessened. He shared with dignity that his sugarcane value was tested by *Aska Sugarmills* much higher than any other sugarcane in the area. Thus he asserted with much pride and pleasures that SSI system of farming has high potential to cover up the loop holes of convenient sugarcane farming and increase the overall production of sugar in an organic way.



Bidyadhar Swain, a marginal farmer from Ranapur, reflected his sugarcane experience with SSI system. He stated that with the help of Prof. Radhamohan Sir, he adopted organic means of farming. Cow urine, cow dung, vermicompost, handi khata etc. are his only reliable source of manure today. He has started growing different vegetables and crops using organic manure. Adopting SSI means of sugarcane farming has helped him in innumerable

ways, like saving the cost of cultivation and water requirement. The cost of cultivation has reduced abruptly in comparison to the conventional method and their production of good organic quality of cane sugar has also increased. But he showed his anguish towards the destruction of his crops due to Phailin, which has created a lot of misery for them.

He shared his experience laying much emphasis on homemade manures and fertilisers as they are cheaper than chemical fertilizers, easily available and just and proper for maintaining the fertility of their soil. He confessed that by growing vegetables and crops organically he has attributed to the benefit of environment and health issues which are the prime consideration of today's era.



Chandrashekhar Mehra, a successful farmer from Ganjam district confessed his transmission from conventional way of sugarcane farming to SSI system. Since last two years, he has been successfully carrying on the SSI system with noticeable increment of sugarcane production and his income subsequently. He said that Nirman introduced the system of SSI farming to him and he got all the necessary training and equipments required for farming. 50% of the

total land in Ganjam district is under sugarcane cultivation and the production of sugarcane can be increasingly high if SSI is followed by every farmer over there. He said that previously

they used around 3 tons of seeds for one acre of land and sometimes even more. They were unbelievably shocked when Nirman informed that the same amount or may be more production can be done by using only 50 kg of seeds. They said that cane can be produced by using the buds of the cane and the waste material can be used as manures thereby reducing their input cost considerably. He showed his gratitude to Nirman for taking the responsibility of raising the nursery to transplanting the seedlings in the field thereby giving practical training to the farmers of adopting SSI system. The soil was prepared first by using organic manure. He confessed that the fertility of the soil was degraded by the consistent use of chemical fertilizers by the farmers. They used truckfull of fertilizers to increase the productivity but it has lost the soils fertility in long run. But it was suggested by Nirman that in SSI system of farming, chemical fertilizers are not promoted and they were taught to make different types of handmade manures with the help of cow dung, cow urine, liquids manures etc. He said that adaptation of SSI system of farming has changed his life as the water requirement, seed requirement and the use of chemical fertilizers has curtailed thereby reducing their cost of cultivation. He also agreed that the quality of their canes has raised high and the content of sucrose has also increased. They are now able to produce better quality canes which are in high demand in the market and the mills also pay them bonus for their production. He considered himself lucky as his crops were not much affected by Phailin and by now he had sold sugarcane worth Rs 5,000 which is just one third of his total produce. He requested the farmers to follow the SSI way of sugarcane production which not only increases the yield of cane production but is also economical and eco-friendly. But he showed his concern for not achieving adequate support from the govt. He appealed to all to take necessary initiatives for the promotion of SSI.

Dhaneswar Sahoo, another farmer from Bargarh district, advocated the successful implementation of SSI system of farming. He said that farmer service to the agriculture is done solely out of their affection for the soil and the crops. He showed his earnest gratitude to Prof. Radhamohan and Nirman for introducing the SSI system to him. He firmly asserted the use of organic manure which is the best way of increasing



production of their crop. He shared his innovative manures made by him using different plants, crushing them and mixing them with cow dung and cow urine. Using guava leaves, custard apple leaves, cow dung, cow urine he prepared manures which acts as effective germicides and also increases the production capacity of the seeds. This locally made manure by him not only helps to retain the fertility of the soil but also acts to protect his crops from getting infected by diseases. He said the manures have got a unique healing effect which can also be used as medicines for humans. He shared a bottle of local made liquor by him using the waste products of sugarcane after extracting jaggery from it and

mixing it with different crushed seeds and leaves which can be used both for plants and humans because of its excellent healing qualities. In one acre of land, by using his home made manures he has earned Rs 99,000. The demand of his organically produced sugarcane is very high among the sugarcane mills and often gets bonus from them. As the expenses of using chemical fertiliser is extremely high, so the farmers get trapped by taking high loans from the bank which they highly can pay back. This in turn increases their insecurities and many of them commit suicide. Therefore, he urged the farmers to unite and stand together for adhering to organic way of farming, so that they can feel the difference between the productivity of their crops.

At the end farmers univocally shared the positive impact of organic manures in the SSI system of farming and also advocated the multiple benefits they accomplished through this system of sugarcane cultivation.

- a. They gained enormous financial profits by selling their product and by making good quality jaggery.
- b. Ensured livelihood and food security through supplementary income and nutrition for themselves and their families.
- c. Curtailed their expenses and liberated themselves from the clutches of landlords and high bank rate of interests.
- d. The females of their families also got their empowerment and they started contributing towards their family farming.
- e. With no chemical inputs they had started stepping towards conservation of the environment and spreading awareness towards deteriorating health issues.

# Photo Gallery:



## List of participants of the state level workshop on SSI

Sl.No.	Name	Organisation/Address	Phone/E-mail
1.	Bijaya Kr. Swain	SATHI,Ganjam	9937567660
2.	Chandrashekhar Mehra	Ganjam	9777368130
3.	Rankanidh Pradhan	Laxminarayan Krushak Sangha,Ganjam	9777536935
4.	Jayachandra Biswal	Laxminarayan Krushak Sangha,Ganjam	
5.	Balaram Jena	Dharitri Krushak Sangha,Ganjam	
6.	Gopinath Sahoo	Dharitri Krushak Sangha,ganjam	9556434034
7.	Sasmita Dash	Nirman	9777000156
8.	Hrushikesh mohanty	Biradi sahi	8908184074
9.	Gopal Pradhan	Chinara	
10.	Chinmoy Ranjan Nayak	Chinara	
11.	Nakul Nayak	Korodabani	
12.	Sushant Jena	Nirman	9090539251
13.	Kailash Chandra Nayak	Angisingi,Nayagarh	
14.	Sibaprasad Sahoo	Ahmisa Club, Bargarh	9937915492
15.	Aneeta Sahoo	Ahmisa Club,Bargarh	9937918492
16.	Lalajee Jhankar	Ahmisa Club,Bargarh	
17.	Gurudeb Sahoo	Ahimsa Club,Bargarh	
18.	Durgeshwar Bag	Ahimsa Club,Bargarh	
19.	Dhaneshwar Sahoo	Ahimsa Club,Bargarh	
20.	Laxmi Prasad	Dhusuma	
21.	Jugal Sahoo	Dhusuma	
22.	Kedareshwar Mohapatra	Baragarada	
23.	Basant Pradhan	Bhutari	
24.	Pandav Mantri	Shikharpur	
25.	Antaryami Pradhan	Fasi Pada	
26.	Dilip Kumar Pradhan	Fasi Pada	
27.	Sudarshan Behera	Dianpada	
28.	Padanava Barad	Nabaghanapur	
29.	Debraj Barad	Nabaghanapur	
30.	Kailash Nayak	Karadabani	
31.	Tinki Roy	Nirman	8598814441
32.	Babu Patra	Bhubaneshwar	
33.	Jaladhra Behera	Chinara	

34.	Jotyaranjan Mahapatra	Bhubaneswar	
35.	Nisakara Pradhan	Karasingh	
36.	Debendra Sahoo	Nirman	
37.	Basant Kumar Pradhan	Kaluchi pali	
38.	Purnachandra Behera	Biradisahi	
39.	Minakhi Sahoo	Biruda	
40.	Hulasa Sahoo	Biruda	
41.	Kalapana Behera	Kaluchiapali	
42.	Abhimanyu Bhuian	Pathara	
43.	Prafula Sathi	Rohibank	
44.	Yudhistir Khilar	Rohibank	
45.	Mochiram Nayak	Nirman	9937828663
46.	Sridhara Nayak	Chinara	7504562680
47.	Saroja Kr. Behera	Raghunathpur	
48.	Anita Kumari Jena	Nirman	9439848705
49.	Prasant Palai	Nirman	8763863285
50.	Sudhansu Mishra,	Bhubaneswar	
51.	Sisir kr. Parija	Bhubaneswar	
52.	Ramesh Chandra Naik	Tumudibandha	
53.	Natabara Sarangi	Niali	
54.	Laxmidhar Sahoo	XIMB,Bhubaneswar	
55.	Prof. Radhamohan	Bhubaneswar	
56.	Aditya Pratap Singh Deo	Nirman,Khandhamal	
57.	Dr. P.K.Nayak	Sugarcane Research Centre ,Panipolia	
58.	Dr.Ambika Prasad Nanda	UNDP,Bhubaneswar	
59.	Dr. Meenakshi Mohanty	SRS,Panipollia,Nayagarh	
60.	Pragnya P.Das	AAO,Sugarcane,Nayagarh	
61.	Rajesh Jhankar	Bhubaneswar	
62.	Prasant Kishor Panda	Jagatsinghpur	
63.	Soumyandra kr.Panda	Jagatsinghpur	
64.	Debasis Nayak	Jagatsinghpur	
65.	Raj Kishore Swain	Kakatpur	
66.	Natabar Kuntia	Odisha Chasi Vikas Trust,Bhubaneswar	
67.	Bidyadhar Swain	Ranpur	
68.	Rabindra Mohapatra	Ranpur(Deuli)	
69.	Bhimasen Palai	Ranpur(Arada)	
70.	Sudhir Samal	Ranpur(Arada)	

71.	Amit Kr.Swain	Ranpur(Deuli)	
72.	Santosh Kr.Parida	Nirman	
73.	Pravakar Swain	Ranpur(Deuli)	
74.	Prasant Mohanty	Nirman	