Compound Annual Growth Rate of area, production and productivity in major crops of A & N Islands for the period from 2005-06 to 2014-15

(in %)

Particulars	Area		Production		Productivity	
	A&N	India	A&N	India	A&N	India
Coconut	0.46	0.14	5.16	3.27	4.68	3.12
Arecanut	1.44	1.25	11.82	5.68	10.22	4.37
Pulses	13.41	1.33	9.97	2.07	-3.06	0.68
Paddy	**-1.76**	0.21	1.32	0.48	3.13	0.28
Oilseeds	**-3.89**	0.22	**-7.91**	0.31	**-3.97**	0.10
Vegetables	4.36	2.78	3.26	4.13	**-1.06**	1.31
Fruit	2.50	1.60	5.24	4.53	2.66	2.89

* CAGR (%) = {End Value/Start Value}^(1/(no. of years-1)) -1

CASE STUDIES

CASE STUDY 1. SEED VILLAGE CONCEPT

An innovative concept introduced to provide truthfully labeled seeds (TLS) in participatory mode from 2011-12 to 2016-17(Six years)

Productivity enhancement

- The percentage increase in yield due to adoption of HYV of rice of CIARI over the local varieties ranged between 13.88 to 49.85% (average 30.4%)

Variety replacement

- New high yielding rice varieties namely CARI Dhan 3,4,5,6,7 and 8, Gayatri, Ranjeet, CSR 23 and CSR 36 covered a sizeable rice area and replaced the old traditional low yielding rice varieties viz. C-14-8, Jaya, Lal Sanno and Silver Jaya etc. at North Andaman.

Income enhancement

- Led to enhancement of productivity and thus the return per unit area ranged from Rs.10,000 -15,000/ha.
- It has brought an additional income of Rs.26,000/ha against Rs.16,000/ha from the farmers' variety.

Seed replacement rate

- Increased from 1.7 to 9.6 %.
- Farm-saved seed has been reduced with truthfully labeled seed at appropriate time.

CASE STUDY 2. HYV OF RICE

Area covered with nine promising rice varieties from 2010-16: 94.81 ha (348 farmers) at Diglipur cluster villages through Front Line Demonstration.

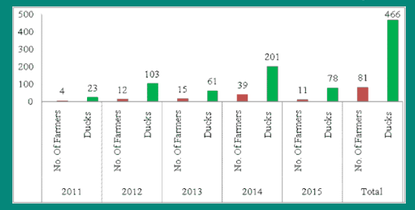
Horizontal Spread of HYV 2013-16

Variety	No. of farmers	Area(ha)
CSR 23	115	55.11
Gayatri	2956	1269.31
CARI 3	180	79.41
CARI 4	465	181.06
CARI 5	643	284.82
Ranjeet	44	20.68
CSR 36	501	225.61
CARI 6	12	2.52
CARI 7	3	0.53
Total	**4949**	**2109.06**

CASE STUDY 3. PEKIN DUCK UNDER BACKYARD

- Since 2011, ORC with three ducklings to a single farmer could spread to 81 farmers in the backyard totaling 466 numbers, spread over 15 villages by 2015.
- A total of 881 eggs of pekin duck were spread by a single farmer.
- The duck would grow to an average weight of 2.637 Kg with low level of mortality, when compared to desi i.e. 1.975 kg of weight with high mortality rate.
- Pekin duck under backyard with a unit size of three birds could give a net return of Rs.4,350 against the desi birds (Rs.1,140) thus giving an additional income of Rs.3,210.

Dissemination of Pekin Duck over the years



CASE STUDY 4. MODEL SATELLITE NURSERY FOR IMC

- In association with KVK, Department of Fisheries, Division of Fisheries introduced in 2012.

Benefits accrued

- Through satellite nurseries farmers received an additional income of Rs.2,70,000 from production of fresh water fishes. More than 12 farmers are practicing the technology.

Technology Backstopping

Division of Natural Resource Management
Division of Horticulture & Forestry
Division of Animal Science
Division of Field Crop Improvement & Protection
Division of Fisheries Science

Technology Facilitators

Social Science Section
Krishi Vigyan Kendra - South Andaman
Nicobar and North & Middle Andaman
Development Departments of Andaman & Nicobar Administration and NABARD

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TECHNOLOGIES ADOPTED & POPULARIZED FOR INCOME ENHANCMENT THROUGH PARTICIPATORY MODE IN ANDAMAN & NICOBAR ISLANDS

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2018 - 19

TECHNOLOGY I: SEED VILLAGE CONCEPT

- An innovative concept was introduced to provide truthfully labeled paddy seeds (TLS) in participatory mode from 2011 to 2016 under the Out Reach Centre in association with plant breeders of the Division of Field Crop Improvement & Protection of the Institute.
- Seeds produced were purchased from farmers & NGOs through buy back mode.
- The seeds have been given to Department of Agriculture, A & N Administration for its multiplication and dissemination to larger stakeholders distributed all over the Islands. The seed replacement is in the tune of 9.60% at North Andaman.




TECHNOLOGY II: SATELLITE FISH NURSERY FOR PRODUCTION OF FRESH WATER IMC SEEDS

- Satellite Fish Nursery Technique was introduced for the first time in 2012 at Diglipur involving Fisheries Science Division of CIARI, Department of Fisheries, A & N Administration and KVK to raise nursery of fresh water fishes of exotic carps.
- In a span of six months a farmer could earn Rs.2,70,000 by adopting the technology at North Andaman.


- Many more youths have come forward to adopt the technology.
- Department of Fisheries, A&N Administration is promoting the concept across the Islands.

TECHNOLOGY III: PEKIN DUCK UNDER BACKYARD

- Pekin duck, a demand driven technology for small farmers can grow up to an average weight of 2.637 kg with low level of mortality, when compared to desi i.e. 1.975 kg of weight with high mortality rate.

- Under backyard with a unit size of 3 birds gave a net return of Rs.4,350 against the desi duck (Rs.1,140) thus giving an additional income of Rs. 3,210.

TECHNOLOGY IV: MICRO BUSINESS MODULE

- To retain farm youth in agriculture, an innovative approach of translating 14 technologies in agricultural and allied fields as Micro Business Modules (MBM) for providing decent livelihood options to the youths of the Islands has been developed.

- The detail of the technology is available on ICAR-CIARI, Port Blair website http://icar-ciari.res.in.

TECHNOLOGY V: IMPROVED NICOBARI FOWL

- Improved Nicobari fowl has high egg laying rate, when compared with the local fowl i.e. 160-180 eggs on an average which is 100 numbers more than the local fowl (60-70 eggs).
- It also has high disease tolerance and low mortality when compared to the country fowl.

- It also indicated a net return of Rs.13,600 whereas in case of local the net return obtained was Rs.6,500 resulting in an additional income of Rs.7,100 from a unit size of 20 to 25 birds under backyard.

TECHNOLOGY VI: INTEGRATED FARMING SYSTEM (IFS)

- IFS models for different micro-farming situations in hilly upland (plantation+dairy+backyard poultry), medium uplands (crop+cattle+fish+poultry and crop cattle+fish+poultry+goat) and valley areas (rice+ vegetable+fish) at farmer's field has increased farm income (Rs.3.9 lakhs/ha/yr) besides additional employment generation (163 man days/ ha/year).

TECHNOLOGY VII: BROAD BED AND FURROW SYSTEM (BBFS)

- In BBF System for low lying areas, through adoption of okra-amaranthus - okra in beds, brinjal + moringa + banana in border areas and rice + azolla + fish in furrows, Rs.1,17,532/ha can be obtained, which is 11 times higher than the normal cropping of paddy followed by pulses/fallow.

TECHNOLOGY VIII: INTEGRATED FARMING SYSTEM FOR TRIBAL AREAS OF NICOBAR ISLANDS

- Homestead based Integrated Farming System model was introduced at Car Nicobar to provide nutritional security for the tribals.
- Villagers could harvest bumper crop of vegetables in their homestead garden and shared with other tuhets.
- Surplus was put for sales for outsiders.
- Compared to the conventional method it ensured wide diversity of crop and animal produce and stability of income.
- The technology effectively utilizes all the resources in a sustainable manner.



TECHNOLOGY IX. INTEGRATED LAND IMPROVEMENT FROM DEGRADED LAND THROUGH LAND SHAPING

- Restored 200 acres of degraded coastal land and provided livelihood support to more than 500 farmers through need based integrated land improvement approach comprising of six different methods viz. broad bed and furrow, rice-fish, three tier farming, farm pond, paired bed & furrow and pond-nursery systems covering 37 ha at South and Middle & North Andaman Districts.

Economic Feasibility of CIARI Technologies

(in Rupees)

Technology	Net Income		Additional income over farmers practice	Additional income per month	Return per Rupee invested
	Farmers practice	Improved practice			
Broad Bed & Furrow/0.20 ha	1,500	30,500	29,000	3,875	2.90
Pekin duck under Backyard /unit of 3 birds	940	3,800	2,860	367	7.33
Induced Breeding of fish/ha	-	1,25,000	1,25,000	10,416	6.0
Yorkshire pigs/unit of 2 pigs	-	39,375	39,375	4740	3.25
HYV of Rice/ha	18,200	37,400	19,200	1600	1.01

IMPACT OF TECHNOLOGICAL CONVERGENCE WITH A & N ADMINISTRATION

Remarkable impact has been made through transfer and adoption of technologies *viz.* Integrated Farming System, Broad Bed and Furrow System, Homestead based Integrated Farming System for tribals, Seed Village for producing Truthfully Labeled Seeds of rice, Satellite Fish Nursery for production of fresh water IMC seeds, mud crab fattening, Nicobari fowl & Pekin duck under backyard, micro business modules have brought visible impact on production, productivity and improvement in the livelihood of farmers.