

Soil Health Improvement Initiatives and Integrated farming in India..BAIF Approches



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Organization Overview

- Founded by noted Gandhian, Dr. Manibhai Desai BAIF Development Research Foundation has been committed to sustainable development of rural India.
- BAIF's Mission is to create opportunities of gainful self-employment for the rural families, especially disadvantaged sections, ensuring sustainable livelihood, enriched environment, improved quality of life and good human values.
- Development program's being implemented in 16 states, transforming lives of over 4.4 million rural families.



BAIF Thematic Areas

Ministry
culture

Livestock Development

- 3.15 million cows and buffaloes producing milk of 4.16 million tons having cost of Rs.121 billion per annum
- Independent Doorstep AI service model: 4016339 AI
- 10 lakh + families benefited by gaotary development
- Regular income source

Natural Resource Management

- 314089+ ha covered under watershed development program
- Enhanced Crop Production by 30-40%, crop yield by Rs. 1000 crs per annum.
- 188989+ families benefited

Agri – Horti – Forestry (Wadi)

- 71872+ ha under wadi cultivation
- Enhanced HH incomes by 40,000 – 45000 annually
- 197863+ tribal families benefited, enhanced production by 800 crs.
- Reduced migration, improved food and livelihoods security, improved nutrition intake and regular schooling.

Climate resilient Agriculture

- Selection of short duration drought resilient crop
- Promotion of water conservation practices such as micro-irrigation, shelterbelt plantation etc.
- Conservation of native food crop varieties and cultivation of short duration with improved method of SRI covering 952 ha by 2000 families

Quality of Life

- 2300 families establish kitchen gardens to combat malnutrition.
- Awareness generation through 3267 SHGs on malnutrition, healthy WASH practices and promotion of kitchen gardens
- Installing solar utilities and clean kitchen model

Women Empowerment

- 3267 + women SHGs across 8 states
- 9.75 crs+ cumulatively saving
- Skill and Capacity building initiatives facilitated shift to productive activities, increased awareness and community leadership



Need Based Approach



Impacting Families



Action Research



Strong Result Based Monitoring



Sustainability

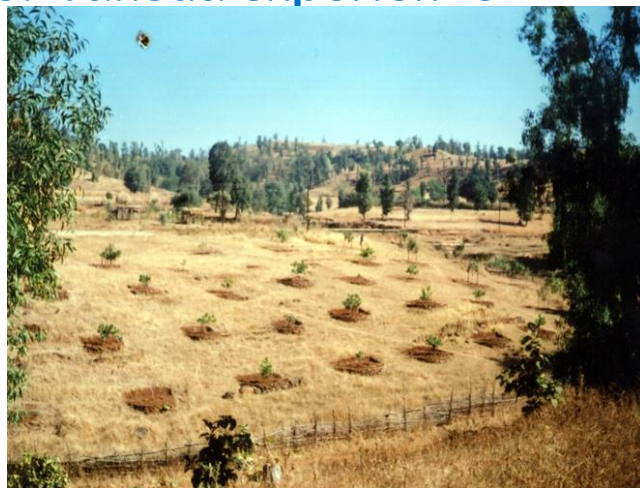
The issue of soil health in India

- Soil degradation causes productivity loss and, ultimately, the loss of land for agricultural production.
- Around 70% of the country's 1.35 billion people engage in agriculture.
- Annual soil loss is estimated at 16 t/ha
- 147 million ha (44% of the land area) are now affected by soil degradation
- Land under additional pressure by urbanization and industrialization
- Mineral fertilization is not the solution to compensate decline in productivity



BAIF Approach to improve soil health

Family based approach evolved over a period of 10 years on the basis of Vansda experience



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Carbon stock and carbon sequestration in wadi

Orchard age- 7 to 14 years

- Accumulated carbon in woody mass
- Amala tree- 0.05 t, Mango- 0.04 t, forestry trees at boarder end- 0.012 t per m²
- Orchard accumulated- 8.1 t per ha in upper 15 cm soil.
- Total upper and below ground biomass of 10 year wadi contain 23 t per ha of carbon which is equivalent to 84.67 t of CO₂ per ha
- Increase of soil carbon from 0.42 to 0.60 % was observed in four years.



Post production services of Wadi

**Local youth
trained in cashew
processing**



Cashew shell and nut



Packaging of mango pickles



**Cashew
shell
and nut**

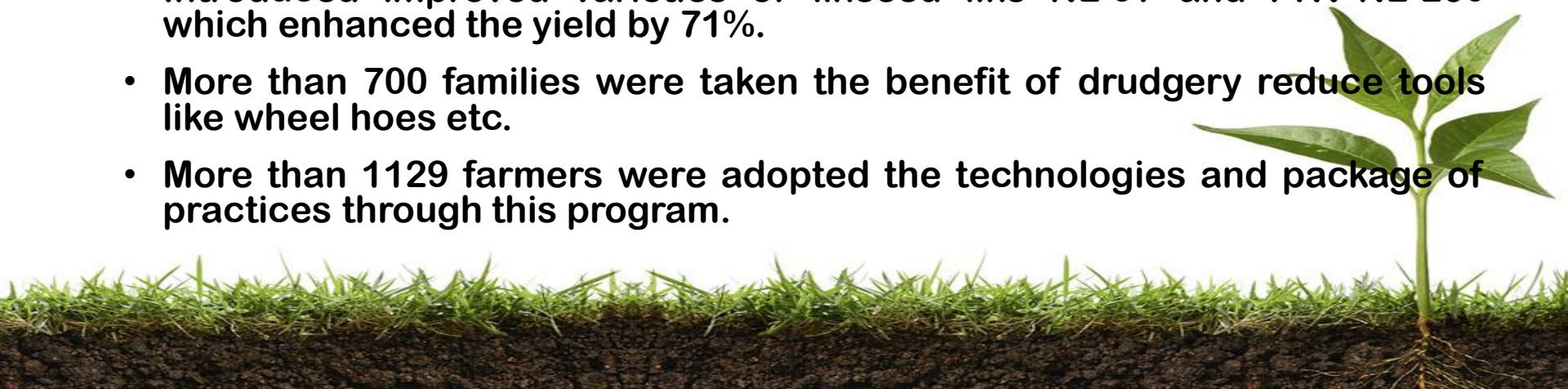
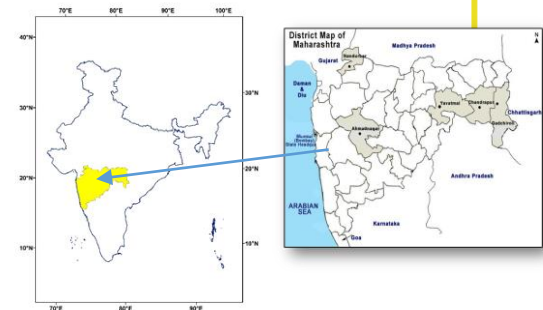


National Agriculture Innovation Project-ICAR

- Implemented in: 5 district of Maharashtra state, India
- It's a Sustainable Rural Livelihood Security project in backwards districts of Maharashtra state.
- Project duration: 7 Years (2007-2014)
- Family covered: 20990

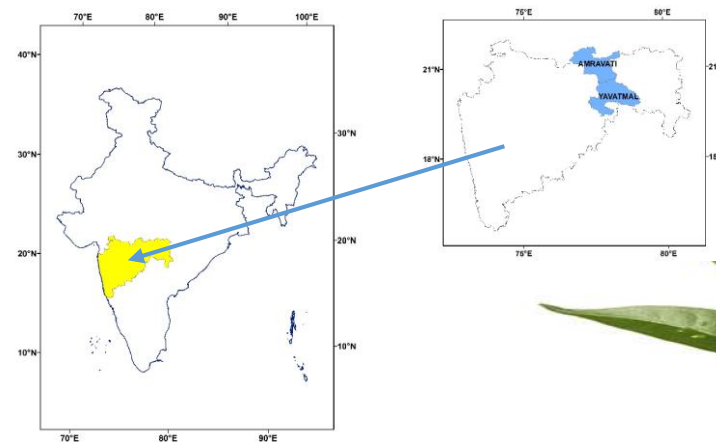
Impact of study

- Annual income of household increase by 104%
- Migration reduced by 70% (257 families supposed to migrates which reduce to 76 families only.)
- Because of Integrated Nutrient Management (INM) and Integrated Pest Management (IPM), the yield of Paddy, soybean, wheat and gram were increased by 118%, 71%, 57% and 75% respectively.
- Introduced improved varieties of linseed like NL-97 and PKV-NL-260 which enhanced the yield by 71%.
- More than 700 families were taken the benefit of drudgery reduce tools like wheel hoes etc.
- More than 1129 farmers were adopted the technologies and package of practices through this program.



Soil Protection and Rehabilitation for Food Security in India

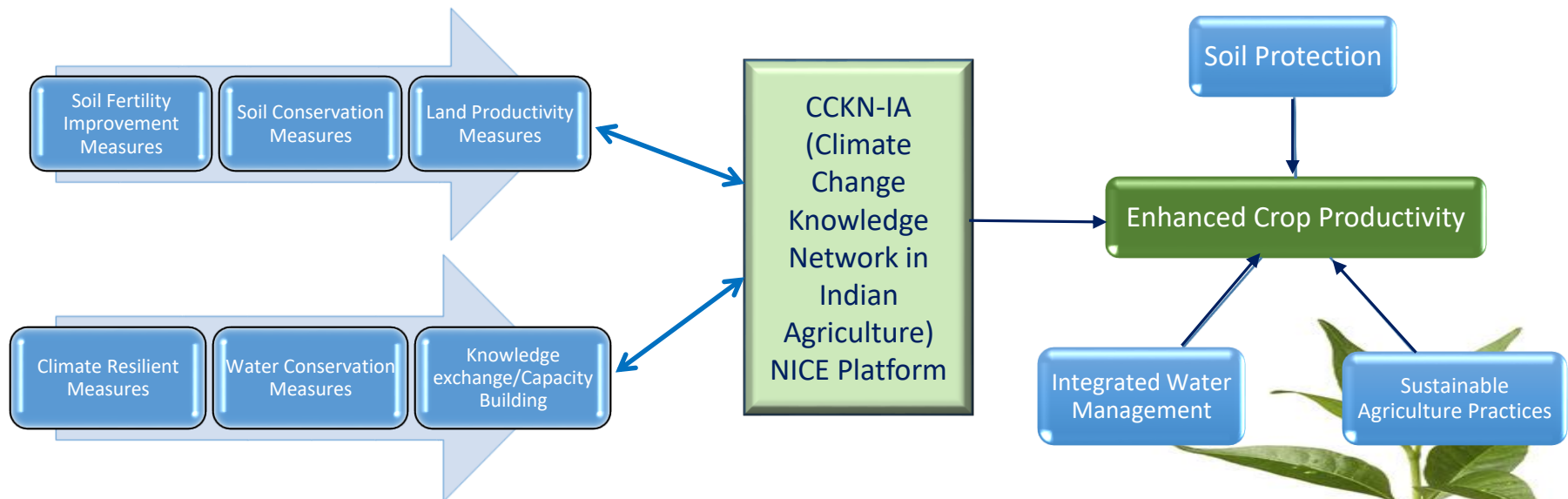
- BMZ's ONE WORLD – No Hunger Initiative
- Objective: „A world without hunger is possible.“
- The program on “Soil Protection and Rehabilitation for Food Security” is part of this initiative.
- Programme is being implemented in 5 countries
 - Benin
 - Burkina Faso
 - Ethiopia
 - Kenya
 - India



Problem addressed: Degradation of natural resources >> reduced food production

- Approximately six million hectares of land worldwide become degraded each year
- Land degradation affects approximately 94.87 m ha (37%) of the total geographical area in India

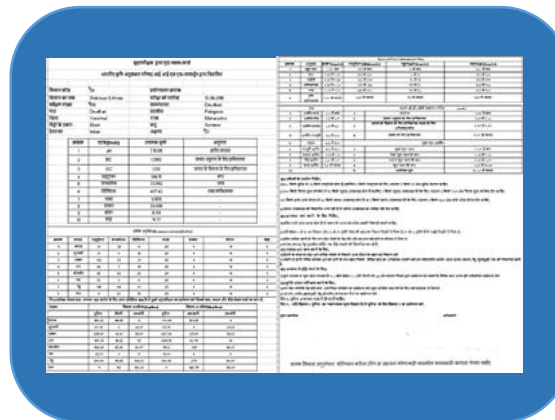
Project Area: 14 villages in 4 Clusters of Yavatmal and Amravati of Maharashtra, area covered: 10000 Ha, Household covered: 3000



Nutrition recommendation through soil testing



Village meeting



Soil test report
and
recommendation



Soil sample collection tra

1500 Soil
samples were
tested,
distributed 1500
soil testing
report with
recommendation
s.



Understand
soil test report
by an expert



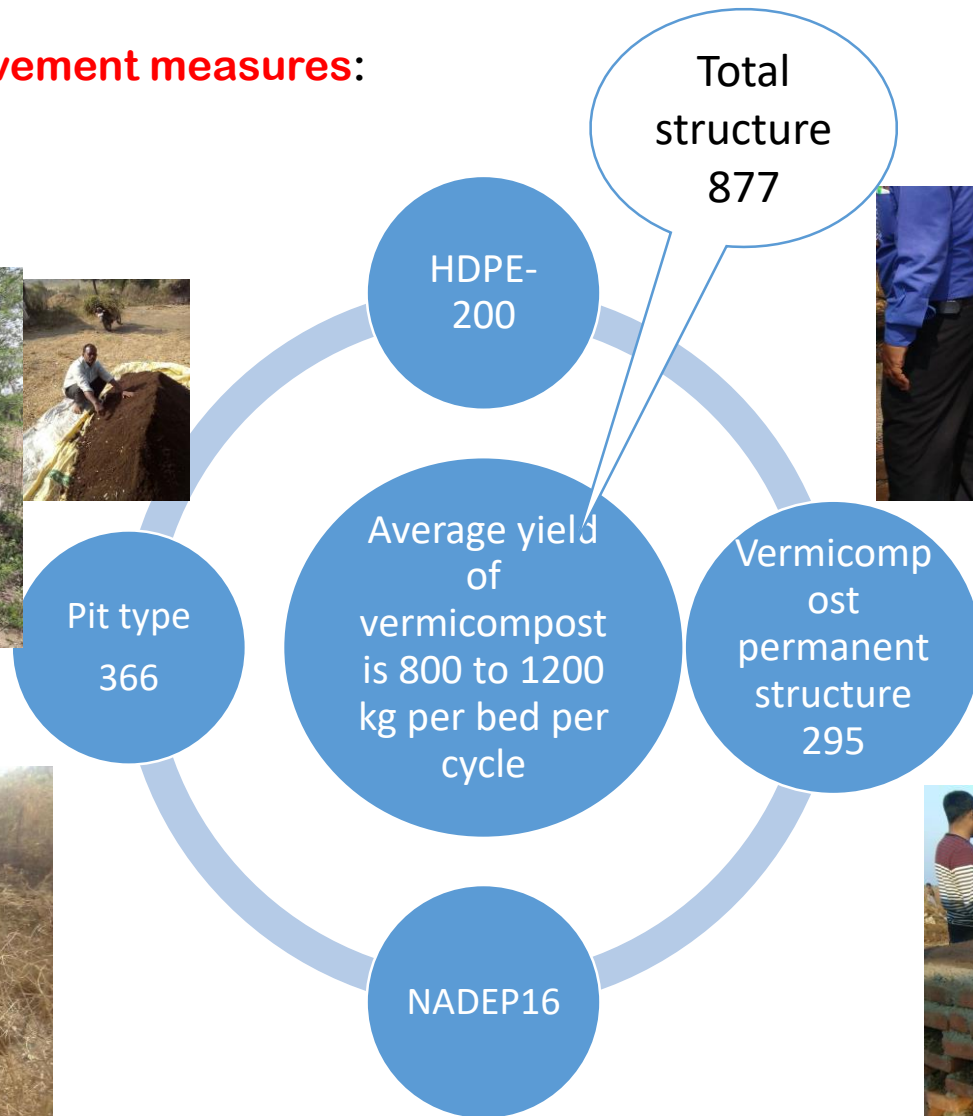
Soil Testing



Soil Test
report
distribution
to farmers



Fertility improvement measures:



Major outputs

- Capacity Development of more than 2400 families to implement measures for soil conservation, rehabilitation of degraded soils and enhancement of soil fertility
- Implementation of climate resilient measures to enhance soil health in cooperation with agricultural extension services.
- Improvement the productivity of Cotton, Soybean, Pigeon pea, Wheat and Gram by 40%, 36%, 40%, 28% and 30% respectively.
- Increased water availability by 70 Million of liter through different water conservation structures and improved water use efficiency through micro irrigation system.
- Documentation and dissemination of good practices through knowledge exchange formats and the promotion of a soil information system.
- Increased capacity of farmers and women farmers for agriculture planning and adoption of new technology.
- More than 3200 farmers and 1068 women's farmers were taken the training on different agriculture practices.



Bonn 16th November 2017 – 2nd FORUM of PARTNERS

BAIF at a glance: Soil conservation and Water Resources Development in 11 states of India



1	Degraded lands rejuvenated through watershed management approach (ha)	3,04,386
2	Number Diversions developed (numbers)	97
3	Farm ponds and networks (numbers)	7749
4	Area covered under Silvipasutre management (ha)	5495
5	Ravine land treated (ha)	5111
6	Watersheds completed (numbers)	669
7	Villages covered (numbers)	1022
8	Families covered (numbers)	193618



Integrated Renewable Energy and Sustainable Agriculture (IRESA) model

- Its a complete package comprising of a portfolio of activities around the central theme of household level biogas units.
- Focus is on energy generation for cooking and value added organic manure production for soil fertility.
- The slurry is used to produce value added quality organic inputs like Phosphate reached organic manure (PROM) for intensive for small plot (10 -20 R/ 0.25 – 0.5 acres) farming for high value crops.





Thank you

