



National Agricultural Innovation Project



Monitoring & Evaluation

Presented to the
Implementation Completion Review Mission

Outline of Presentation



- Focus of M&E
- An Overview of M&E Activities
- Results Framework Indicators
- Comprehensive Outcome Focused Impact Evaluation
- Experiences, lessons & Reflections

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Focus of Monitoring



Focus of M&E was on tracking results than monitoring implementation.

The implementation processed monitoring included tracking of inputs mobilization, activities undertaken and completed, and outputs delivered. The result based system added, monitoring of project outcomes in addition to implementation based monitoring.

Overview of M & E activities



- National Level - Concurrent monitoring
 - Consortia level monitoring
 - Comprehensive outcome focussed independent external impact evaluation
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National Level - Concurrent Monitoring



- **M&E Manual**
- **Holistic Benchmark survey**
- **Developing a ‘Results Framework’**
- **Technology catalogue**
- **High impact consortia case studies**
- **Online monitoring and tracking**
- **Building up data repository**
- **Comprehensive M&E report**

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- **Development of score card & grading system**
- **Action plan to improve the performance of the MS consortia**
- **Comprehensive outcome focussed independent impact evaluation**
- **Cross cutting workshops**
- **Coordinating reporting process**

Consortia Level Monitoring



- **Consortium Advisory Committee (CAC)**
- **Consortium Implementation Committee (CIC)**
- **Consortium Monitoring Committee (CMU)**



Frequency and Intensity of Consortia Monitoring



Component	Consortia		CIC		CAC		CMU		Total	
	Total	Reported	Mean	Range	Mean	Range	Mean	Range	Mean	Range
II	51	38	5.68	2 - 14	4.24	2 - 12	2.39	1 - 22	12.32	5 - 43
III	33	29	7.69	2 - 25	6.69	3 - 13	4.17	1 - 27	18.55	3 - 43
IV	61	46	3.89	1 - 18	2.70	1 - 17	1.15	1 - 17	7.74	1 - 18

Holistic Bench Mark Surveys



Baseline surveys were conducted in two stages:

- (1) National level by M&E Consultants**
- (2) Consortia level by the CPIs**

Baseline survey by M&E Consultants

Component	Completed & submitted	Area Coverage
Component 1	May 2008	56 ICAR Institutes and 25 SAUs including deemed and Central Universities
Component 2	November 2008	1350 households from 51 villages and two islands
Component 3	September 2008	1450 farm household in 62 villages in 23 disadvantaged districts in 15 states under 13 agro-climatic zones
Component 4	May 2008	7 Consortia



Results Framework Indicators as on June 2014

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Component I – The ICAR as the Catalyzing Agent for the Management of Change in the Indian NARS



(no.)

S.No	Indicators	Baseline	Progress up to June 2014	End Project Target
1	Mass communication campaigns (TV, radio, print, email, web)	0	245	17
2	Linkages formed with KVKs and Community Information Centres	1000	74%	50%
3	Hits on the ICAR & SAU web sites per month	50000	308000	55000
4	Queries responded to from public, private organizations and NGOs per month	1000	90%	75%
5	Business planning and development units set up	0	23	5
6	Applications for patents and licenses (facilitated by BPDUs)	15	616	95
7	People attending visioning and policy analysis events	0	4978	2850
8	Procurement cycle of high thresholds goods (weeks)	50	26	30
9	ICAR finance managers using the new Financial Management Software system (%)	0	74	100

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Component II – Research on Production to Consumption Systems (PCS)



(no.)

S.No	Indicators	Baseline	Progress up to June 2014	End Project Target
1	Consortia established	0	51	15
2	Private sector organizations participating in consortia	0	69	40
3	Production technologies released and/ or adopted	0	131	75
4	Processing technologies released and/or adopted	0	174	95
5	New rural industries established	0	58	30
6	National or regional quality graded product groups	0	35	25
7	Farmers involved in consortia activities	0	68603	12750



(no.)

S.No	Indicators	Baseline	Progress up to June 2014	End Project Target
1	Consortia established	0	36	20
2	Technologies made available in disadvantaged areas	0	426	300
3	Technologies adopted in disadvantaged areas	0	278	80
4	Farmers using NAIP technologies in the disadvantaged areas (million)	0	0.81	0.60
5	Increase in agriculture services and processing enterprises in project areas (%)	2790	45	20
6	Agriculture based employment amongst participating farming households (person years)	0	44374	18000
7	Farmers groups involved in project activities	0	3191	600
8	Land brought under sustainable management practice (GEF)	0	8371	5000



Component IV – Basic and Strategic Research in the Frontier Areas of Agricultural Sciences (BSR)



S.No	Indicators	Baseline	Progress up to June 2014	End Project Target
1	Consortia established	0	61	15
2	Overseas exchange visits/training programs on basic/strategic research related topics by Indian Scientists	0	487	420
3	Papers in high impact international scientific journals	0	384	190
4	Patent applications	0	118 [#]	85

[#]For NAIP as a whole; Component IV - 77



- **CPI survey**
- **Stakeholder survey**
- **Impact of capacity building**

Distribution of sampled sub-project across components

(no.)

Component	Sub-projects
1	14
2	21
3	20
4	10
Total	65

2-3 interventions per sub-project in Components II & III

30 beneficiaries and equal or two-third non-beneficiaries per intervention

Analysis in partial budgeting framework



Sampled Stakeholders Distribution



Stakeholder	Number
Farmers	4908
Artisans	110
Processors	73
Researchers	406
Others	60
Total	5557



Benefits identified across the components



Component	Tangible Benefits	Intangible Benefits
I	Productivity, quality, incubation fee, royalty, number of enterprises supported, increase in turnover of clients, increase in tax revenues, number of direct and indirect jobs created, backward linkage (no. of farmers benefited and increase in farmers' income, import substitution, export revenues, value chains developed, etc)	Increased reach, accessing new markets (migration), reduced learning time, increased retention, self-paced, faster rollout, consistent delivery, customisation, leveraging human capital, gender equity, empowerment, entrepreneurship, enhanced business opportunities, etc.
II	Increase in yield/productivity, price, elimination of middle men, incremental employment, change in time, location of sale, and production form, losses avoided, exportability, value addition, time saving, etc.	New jobs – adding to social status/self-esteem, accident reduction, drudgery reduction, improvement in gender equity, increase in empowerment, improvement in environment
III+GEF	Increase in yield/productivity, saving in inputs, reduction in cost, increase in net income, increase in cropping intensity, quality improvement, losses avoided, value addition, time saving, crop diversification, etc.	Reducing risk, better health/nutrition nutrition security, arresting distress migration, reduced diseases, accident reduction, drudgery reduction, improvement in gender equity, increase in empowerment, improvement in environment, etc.
IV	Reduced lag in animal/crop improvement, improved resistance, increased productivity, loss prevention, etc.	Improved research capital stock, and trained manpower.

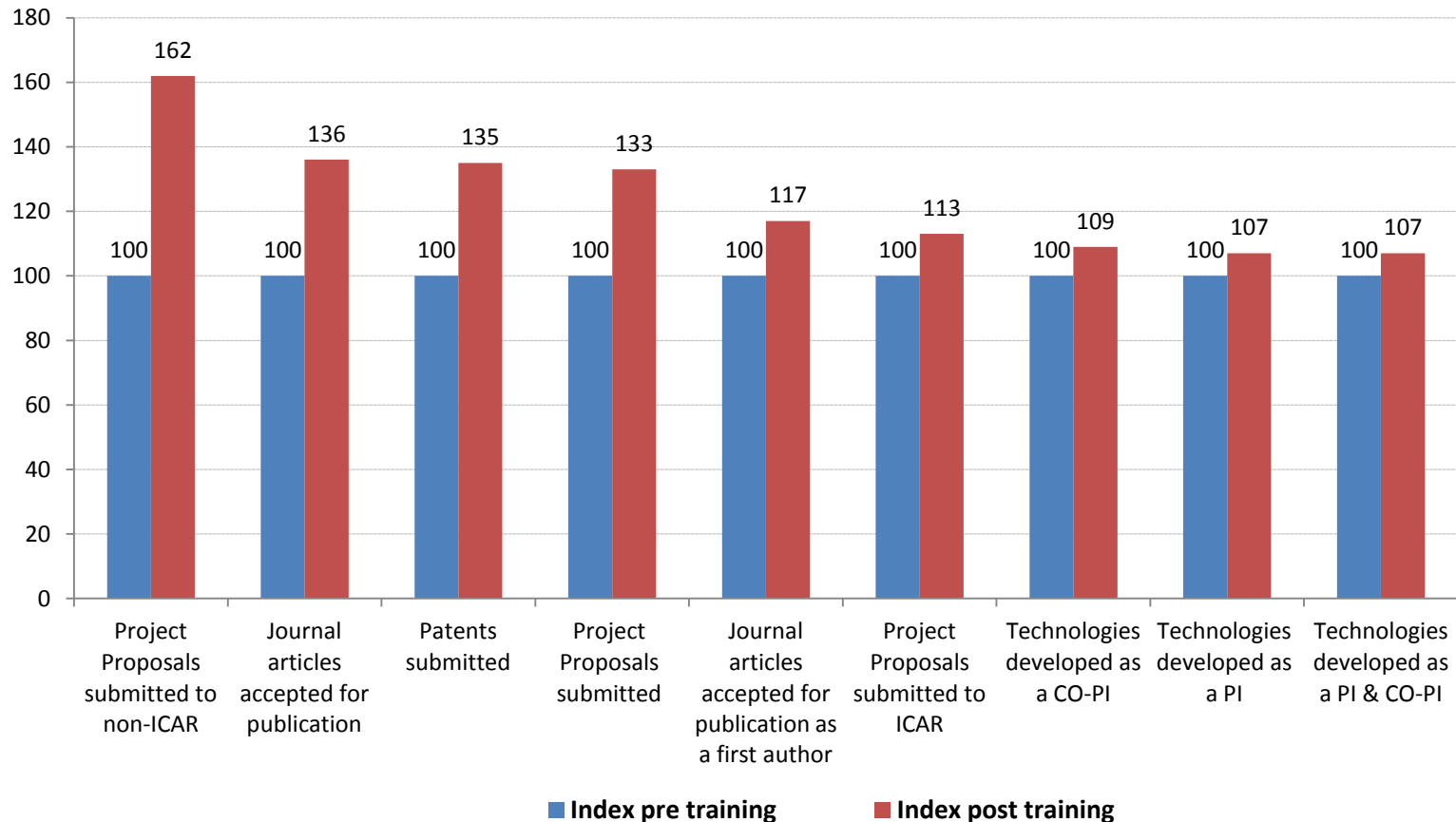
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A Snap-shot of Financial and Economic Analyses

(Rs.Million)

Details	Components				GEF	Overall NAIP
	I	II	III	IV		
Sub-projects analysed	12	14	14	6	2	46
Expenditure on sample projects	2396.25	613.91	1236.38	346.03	230.10	4592.27
Financial benefit accrued	-----	1301.51	2494.39	-----	453.89	8086.54
Economic benefit accrued	3685.13	1317	1789.69	606.02	733.49	7501.89
FBCR	-----	2.12	2.02	-----	1.97	1.76
EBCR	1.54	2.15	1.45	1.75	3.18	1.63
Expenditure on the component	4702.23	2291.20	2295.25	3642.43	360	13291.10
Benefit from the component	7231.48	4857.41	4630.67	6379.18	710.10	23808.81
Economic benefit	7231.48	4915.20	3322.44	6379.18	1148.33	21848.30
EBCR	1.54	2.12	1.44	1.75	3.16	1.64
Internal rate of return (%)	19.26	50.08	43.34	57.33	41.19	40

Indicators of benefits/outcomes of CBPs in terms of output index in pre and post training period



Note:-Technologies developed are defined application of techniques for improving productivity through developing new varieties/breed. Possible technologies are:- prototype, genetic/stock, variety/breed, product, vaccine, diagnostic kit, process, methodology/technique.

Benefit- Cost Ratio – Case Studies (figures in parentheses represent no. of trainees)

Theme	Product	Average B-C Ratio
Marker Assisted Selection (123)	HY Cattle	11.35
	Disease Resistant PB	9.32
	Salt Tolerant PB	9.31
Nanotechnology (19)	Nano-biochar	1.95
	Biobased polymeric films	1.13
	Cellulose nanofibre	1.25
Fermentation technology (15)	Nisin (biological preservative)	1.40
	Cellulosic ethanol	1.15
Carbon Trading / Sequestration (19)	Carbon Credits	1.85
	GHG reduction factors	2.52
Genome Resource Conservation (13)	All economic traits	3.88
Genome Resource Conservation (Hort.)	Hybrid	1.009
Nutraceutical (Fisheries) (20)	Nutraceuticals Fish	1.17
Allele Mining (14)	Identification of special Genes	25 times cost efficient



Sustainability and scalability



Component	Consortia Platforms, National Fund, Technology Missions & State Govts
I	<p>CeRA, SAS, NABG, FIS-MIS, ASRB online exam facility – PME Cells -Mainstream Budget</p> <p>Market Intelligence – under Plan in TNAU & as GoI funded project in NCAP</p> <p>Visioning – National Centre on Technology Foresight</p> <p>E-courses – commercialization</p> <p>ASRB – hire out online exam centre facilities regional/study centres like IGNOU</p>
II	<p>Captive markets, VCF, MSME and Pvt industry & Technology Mission</p>



Component	
III	Sustainability Fund Rice-fish-poultry (T.N.Govt. to implement) Financial inclusion schemes of GoI Microfinances through SHGs
IV	Candidate for funding under Plan, National Fund, DBT, DST, National Fellow/Professor Scheme, etc. Flexi rubber dam – likely to become a state governments scheme DSS on Rice and Cotton based cropping systems – has potential to become a Plan scheme (RKVY)

Experiences



Publication (NARP) – Technology (NATP) – Commercialization (NAIP)

Uni-disciplinary – multidisciplinary – multi-organizations

Public sector research – PPP – NGOs

More number of small budget projects – small number of high budget projects

O & M Reforms - Improvement in transparency and project management

Harnessing comparative advantage in action research

Sustainability fund, social mobilization, self help and producer groups

Concurrent comprehensive independent evaluation vs ex-post in NATP

Frequent changes, still continuity is robust

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Lessons Learnt



Need to objectivise PAD indicators

CPIs not sensitized for Results Framework & Evaluation

Basis for indicators – theme than component

Gap in the perspectives of CPIs & PIU

PIU – CMU linkage should be organic

Timely association of agricultural economist

Non-revival of M&E Consultant's contract

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Need for reviving PMTS

Process for defining, certifying, validating and testing

Desirability of PIU being CL/CPI

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Change of mind set

- Thinking Big – outlays & outcomes
- Institutionalization of PME Cells in ICAR
- Commissioning of impact assessment studies across NARS

M&E Concepts' popularity & acceptance disproportionate to its share in NARS outlay – is the major success



THANKS

Consortia level monitoring



- **M&E work plan and budget**
- **Half-yearly and annual reports**
- **PME related training programmes**
- **M&E exposure sessions**
- **M&E practices in field**
- **Monitoring and supervision visits**
- **Baseline surveys & reports**

Framework for Component I & IV

- **Training of Scientists increased efficiency saving cost and time**
- **Efficient transfer of technologies and information**
- **Quality improvement in analysing, computing and publishing**
- **Building up research stock and capacity**
- **Better and faster development of varieties**

Cross Cutting Issues Identified



- **Infrastructure needs & ICT**
- **BPD & commercialization**
- **Production technologies, varieties, landraces, conservation of germplasm, & climate change**
- **Processing method and equipment**
- **Livelihood vs value chain models**

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Progress of consortia formation over years



Component	2007-08	2008-09	2009-10	Total
I	7	9	24	40*
II	9	36	6	51
III	6	18	12	36
IV	10	48	3	61
Total	32	111	45	188*

*Thirteen more Business Planning and Development Units (BPDUs) were started under component 1 during 2013-14 taking the total number of consortia to 203.

Sustainability and scalability

Project	Consortia Platforms, National Fund, Technology Missions & State Govts
Component I	<p>CeRA, SAS, NABG, BPD, ASRB – Mainstream Budget E-courses – commercialization on content enrichment and reach ASRB – hire out online exam facilities regional/study centres like IGNOU</p> <p>Market Intelligence – under Plan VPAGe – National Centre on Technology Foresight PME cells institutionalised in ICAR</p>
Component II	<p>Actors' share important for project sustainability Proper technology pricing is vital for products' sustainability Captive markets can ensure products' sustainability VCF, MSME and Pvt industry can support some</p>
Component III	<p>Sustainability Fund established Financial inclusion scheme of Gol Microfinances through SHGs Rice-fish-poultry (T.N.Govt. to implement)</p>
Component IV	<p>Candidate for funding under Plan, National Fund, DBT, DST, National Fellow/Professor Scheme, etc.</p> <p>DSS on Rice and Cotton based cropping systems – has potential to become a</p>

Incremental Net Income Realized Under Various Livelihood Models

(%)

Model	Range
Crop based	50-235
Livestock based	48-244
Horticulture based	33-152
Forest based	38-751
Fishery based	46-670
NRM based	242-331

Incremental Net Income Realized Under Various Value Chains

(%)

Sector	Range
Crop	13-170
Horticulture	43-258
Livestock	100-170