

National Mission For Sustainable Agriculture

Strategies for Meeting the Challenges of Climate Change



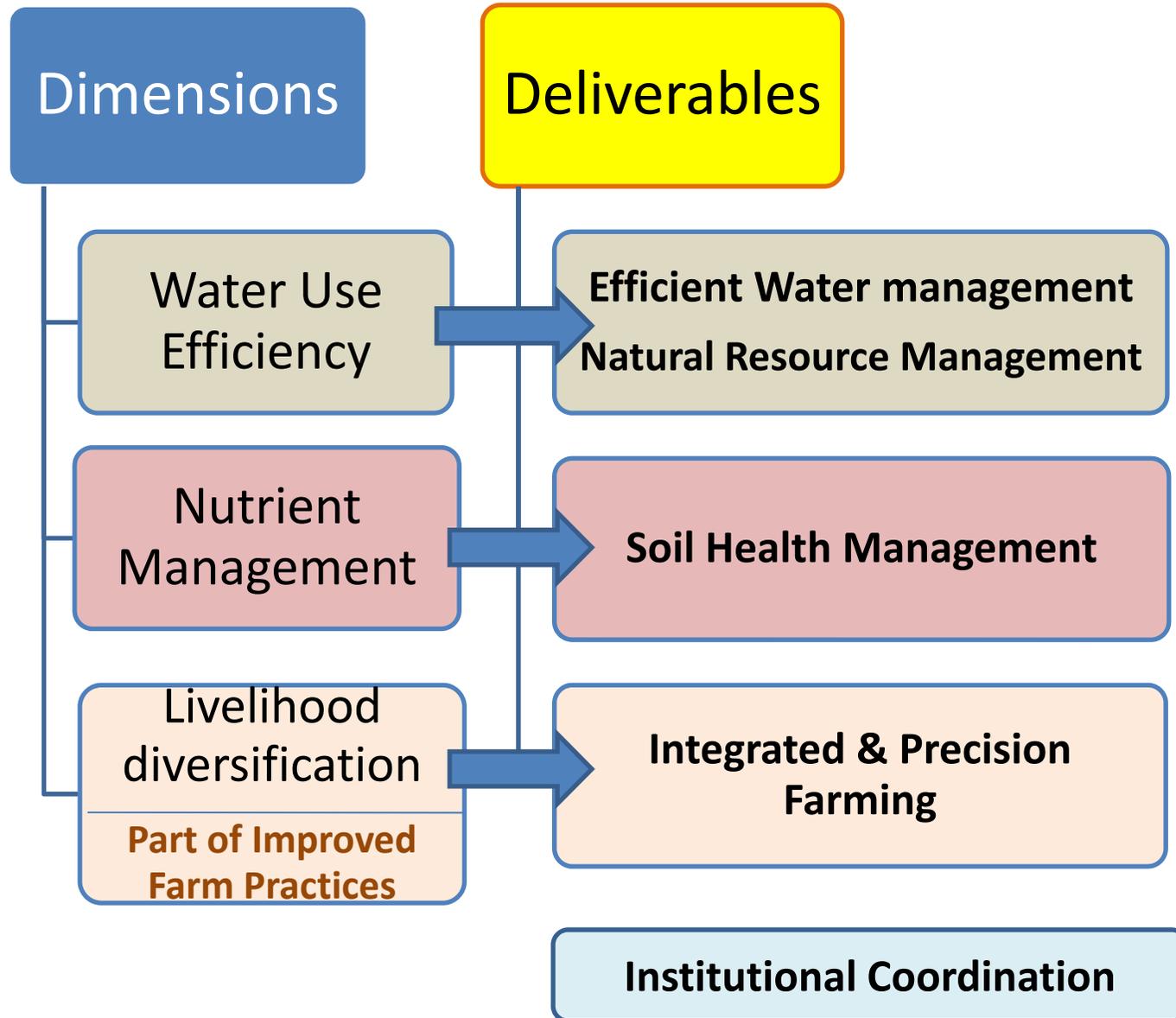
Department of Agriculture and Cooperation
Ministry of Agriculture
Govt. of India



National Mission For Sustainable Agriculture

- ❑ National Mission for Sustainable Agriculture (NMSA) is one of the eight Missions under National Action Plan on Climate Change (NAPCC);
- ❑ NMSA was accorded in principle approval by PM Council on Climate Change (PMCCC) in Sept-2010;
- ❑ NMSA identifies 10 dimensions encompassing whole agriculture sector with 17 deliverables
- ❑ NMSA Programmatic Intervention caters to 3-4 Dimensions covering 5 deliverables
- ❑ XII Plan proposal has been considered by EFC on 20.08.2013

NMSA (as Programmatic Intervention)



NMSA → Restructured Subsumed Schemes

Interventions have been drawn from the following ongoing Schemes/Missions of DAC

- Rainfed Area Development Programme (RADP) – (Sub-scheme of RKVY)
- National Mission on Micro Irrigation (NMMI)
- National Project on Organic Farming (NPOF)
- National Project on Management of Soil Health & Fertility (NPM SH&F)
- Soil and Land Use Survey of India (SLUSI)

NMSA Objectives

- ❑ To make agriculture **productive, sustainable, remunerative and climate resilient**;
- ❑ To adopt **comprehensive soil health management** practices based on soil fertility status;
- ❑ To optimize utilization of water resources through **efficient water management**;
- ❑ To conserve on-farm resources through appropriate **resource conservation technologies**;
- ❑ To develop capacity of farmers & stakeholders in the domain of **climate change adaptation and mitigation measures**;
- ❑ To pilot models in select blocks by **mainstreaming rainfed technologies and leveraging resources** ;
- ❑ To establish an effective **inter and intra Departmental/Ministerial co-ordination** for accomplishing key deliverables of NMSA

STRATEGIES

- Promoting effective management of available water resources and **enhancing water use efficiency** through application of technologies coupled with demand and supply side management solutions.
- Promoting **integrated farming system** covering crops, livestock & fishery, plantation and pasture based composite farming for enhancing livelihood opportunities, ensuring food security and minimizing risks from crop failure through supplementary/ residual production systems.
- Dissemination and **adoption of rainfed technologies** with greater reach in disadvantaged areas and leveraging resources from other schemes/Missions for integrated development.
- Popularizing **resource conservation technologies** (both on-farm and off-farm) and introducing practices that will support mitigation efforts in times of extreme climatic events or disasters like prolonged dry spells, floods etc.
- Creating database on soil resources through land use survey, soil profile study and soil analysis to facilitate **adoption of location and soil-specific crop management practices & optimize fertilizer use.**
- **Involving knowledge institutions and professionals** in developing climate change adaptation and mitigation strategies for specific agro climatic situations and promoting them through appropriate farming systems.
- Establishing platform to **liaison, review and coordinate implementation of interventions outlined in Mission Document** of NMSA under aegis of National Action Plan on Climate Change

Mission Components

- Rainfed Area Development(RAD)
- On Farm Water Management(OFWM)
- Soil Health Management (SHM)
- Climate Change and Sustainable Agriculture
-Monitoring, Modelling & Networking (CCSAMMN)

New Activities proposed

- Resource Conservation Technologies
- Last mile connectivity - energization
- Portable soil testing kit
- Data bank on balanced use of fertilizer
- Organic village/cluster and participatory organic certification
- Reclamation of problem soil
- Conservation & management of Non Timber Forest Produce
- Bio/organic fertilizer quality control lab
- Secondary storage structure
- Drainage development of waterlogged areas

Rainfed Area Development

Approach	Major Activities
<p><i>Watershed plus approach focusing on location specific farming systems; resource conservation technologies; development of common property assets, diversification of farm income etc.</i></p>	Integrated Farming System
	Precision / protected farming
	Resource Conservation Technology
	Storage & value addition
	Rain water harvesting
	FPOs & Capacity Building
	last mile connectivity to water source

Rainfed Area Development

- **IFS** – Cropping system + horticulture, livestock, fishery, agro-forestry, apiculture, conservation/promotion of NTFPs etc.
- **Support for only cropping system not allowed unless diversified from regular practice & suitable to ecological conditions**
- Cluster based approach through soil analysis & 25% OFWM
- Support restricted to 2 Ha/family and Rs. 1 lakh.
- Construction/renovation of ponds, storage/processing unit, construction of poly house are excluded from these limits
- Farmers' producer companies/FPOs for growing/processing/marketing of produces including organic products
- Convergence of relevant programmes in project areas
- Linkage with agro-processing and Marketing
- RCT as gap filling activities and **not in IWMP watershed projects unless recommended by SLNA**

Soil Health Management

Approach	Major Activities
<p><i>Preparation of GIS based thematic maps, database on land and soil characteristics, improved soil & nutrient management practices based on land use and soil characteristics, organic farming, management of problem soils to bring additional area under cultivation etc</i></p>	Soil Resource/Fertility Map
	Setting up of Agro waste/ Bio-fertilizer/ bio-pesticide unit
	Bio and Organic fertilizer Quality Control Laboratory (BOQCL)
	Organic village adoption
	Promotion of INM, micro nutrient, organic input
	Quality analysis under FCO
	Soil Testing Laboratory
	Portable Soil Testing Kit
	Fertilizer Testing Laboratory
Problem Soil Reclamation	

Soil Health Management

- Soil and land resource surveys for comprehensive soil database
- Quality control requirements of fertilizers, bio-fertilizers and organic fertilizers under the Fertilizer (Control) Order (FCO), 1985
- INM - judicious use of chemical fertilizers, secondary & micro nutrients, organic manures and bio-fertilizers
- Soil and fertilizer testing facilities and provide soil test based recommendations to farmers
- Training on appropriate measures on soil nutrient management

On-farm Water Management

Approach	Major Activities
<i>To optimize utilization of water resources through efficient water management & expand coverage for achieving 'more crop per drop', adopting water conservation technologies, efficient delivery and distribution systems etc.</i>	Drip & Sprinkler Irrigation
	Field application system
	Secondary Storage
	Drainage development
	Capacity Building

On-farm Water Management

- Efficient water application & distribution system
- Drip Irrigation – Category 'B' States 15% higher than Category 'A', Category 'C' States 25% higher than Category 'A'
- At least 25% of micro irrigation for crop sector.
- OFWM component restricted to farm size of 5 Ha and further assistance for the same land for the next 10 years is not available
- Secondary storage at tail end of canal system or from perennial sources for use during dry periods
- Drainage development - surface/sub-surface/bio-drainage system
- Training on appropriate water management technologies, judicious use of water and agronomic & land development
- Convergence with watershed development programmes/NGNREGA
- NFSM, NMOOP, NHM, NLM may also use this component

CCSA – Monitoring, Modeling & Networking

Approach	Major Activities
<i>Provide creation and bidirectional dissemination of climate change related information and knowledge by way of piloting climate change adaptation/ mitigation research/model projects in the domain of climate smart sustainable management practices and integrated farming system suitable to local agro-climatic conditions.</i>	Comprehensive pilot blocks for disseminating technologies/ research findings under single window service/ knowledge system
	Knowledge Networking, skill development
	Studies, Documentation, Publication,

CCSA – Monitoring, Modeling & Networking

- Research/pilot/model projects for Climate resilience and IFS models
- Comprehensive and holistic development plan for the pilot block to mainstream sustainable and climate resilient agriculture practices through Consortium approach
- Pilot block will be selected on the basis of following parameters:
 - ✓ *Blocks having least irrigated area*
 - ✓ *Preponderance of SC & ST farmers*
 - ✓ *Lower crop productivity compared to State's average*
 - ✓ *Any other parameters based on State specific issues*
- **State to issue directives to departments/agencies dealing with like MGNREGS, IWMP, NRLM, RKVY, NHM, NFSM, NLM, BGRF etc. to channelize funds through consortia**
- Trainings and demonstrations on various aspects of climate change
- Knowledge Networking, information system, studies, documentation, conferences, workshops etc.– GO, SAU, ICAR, National/ International Institutes, KVKs, R&D organizations

CONVERGENCE

- Water sources developed under IWMP & NREGA would be utilised for IFS and Micro irrigation
- PRI will be associated in identification of cluster, activities and beneficiary
- Linkage of R&D organisation through Standing Tech. Committee
- Cropping System supported through NFSM & NMOOP will be integrated with livestock/fishery/plantation/pasture/small processing unit
- NMAET will be linked in the context of improved inputs, mechanization, extension and information support.
- Model pilot blocks will mainstream rainfed technologies by leveraging resources from other State/Central programmes/schemes
- Provisions of RKVY to supplement NMSA components

Mission Architecture

National Level

- **National Advisory Committee (NAC):** Chairmanship of Secretary (A&C) with representation from Ministries/Departments/Agencies of Water Resources, Rural Development, Panchayati Raj, Environment & Forest, Food Processing Industries, Agricultural Research & Education, Animal Husbandry Dairying & Fisheries, Land Resources, Tribal Affairs, National Rainfed Area Authority (NRAA) etc. Joint Secretary (NRM & RFS) & Mission Director (NMSA) will be the Member Secretary of NAC.
- **Project Sanctioning Committee(PSC):** Chaired by Mission Director, NMSA with representation from ICAR, DoLR, MoWR, Ministry of Tribal Affairs and other restructured Missions will prioritize and approve projects under NMSA
- **Standing Technical Committee(STC):** Represented by CRIDA, CAZRI, ICAR Research Complex for NEH Region and selected SAUs. Eight Technical Experts drawn from ICAR / SAUs with additional responsibility or, engagement on contract will be placed with STC.

State Level

- State Level Committee (SLC) chaired by APC/Pr. Secretary/Secretary (Ag/Hort) with representation from concerned line Dept., CEO of SLNA, SAUs and ICAR
- NMMI Committee may be notified by the State Government as the NMSA Committee with additional members from concerned line departments and chairmanship of APC or senior most Pr. Secretary/Secretary from Agriculture or Horticulture
- Director (Agriculture) will be Member Secretary and Director (Horticulture) will be Co-Member Secretary of the Committee.
- States may create State Mission for Sustainable Agriculture (SMSA)
- State Standing Technical Committee (SSTC) to function as arms of central STC to provide technical advisory to State Mission.

District Level

- District Mission Committee (DMC) will be entrusted with project formulation, implementation and monitoring of NMSA.
- DMC may be headed by Collector or CEO of Zilla Parishad /District Council with representatives from concerned line Departments, ATMA, KVK, Growers' Associations, Marketing Boards, Banks, Non-Government Organizations etc. and Dy. Director (Agriculture) as the Member Secretary.

Implementation

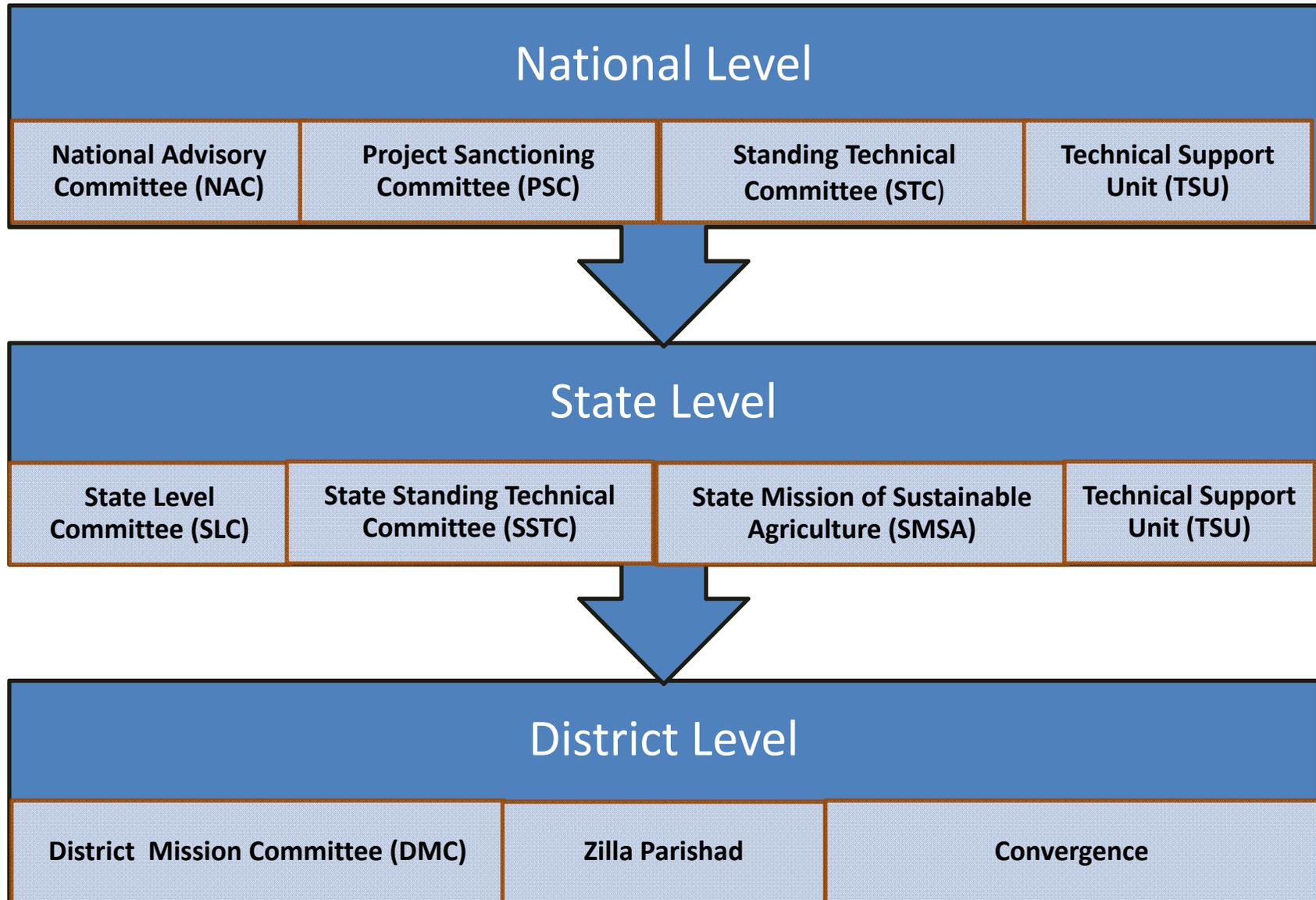
- States will prepare MIP for sustainable agriculture with a horizon of 5-7 years emanating from DAPs and SAP and prioritizing the interventions from climate change aspects and NICRA findings
- Annual Action Plan (AAP) with details of interventions in each of aforesaid four programme components will be prepared to operationalize MIP
- Nodal department will coordinate and collate proposals for all the components under AAP
- Consolidated AAP will be sent to DAC which will be placed before the Project Sanctioning Committee(PSC)
- Consequent to approval of AAP, funds will be released to State
- Funds will be released in installments based on progress, UC, specific emergent needs etc.
- Administrative cost is estimated approximately at 3% at national level and 5% at State level

Monitoring and Evaluation

- Strong technical monitoring and feedback system will be put in place
- Web-based monitoring, video conferencing, desk reviews, field visits, and evaluation of programme implementation will be followed
- State Government to undertake concurrent evaluation during implementation period to facilitate mid course corrections
- Digital location of all the project areas of NMSA will be maintained and uploaded in the digital map of the district and kept in public domain to ensure better transparency
- At district level, monitoring will be undertaken by Joint Director/Deputy Director Agriculture in collaboration with respective Zilla Panchayati Raj Institutions
- Details of approved programmes, activities, name of beneficiaries, cost to be displayed at the Panchayat Bhavan/prominent public place in the locality.

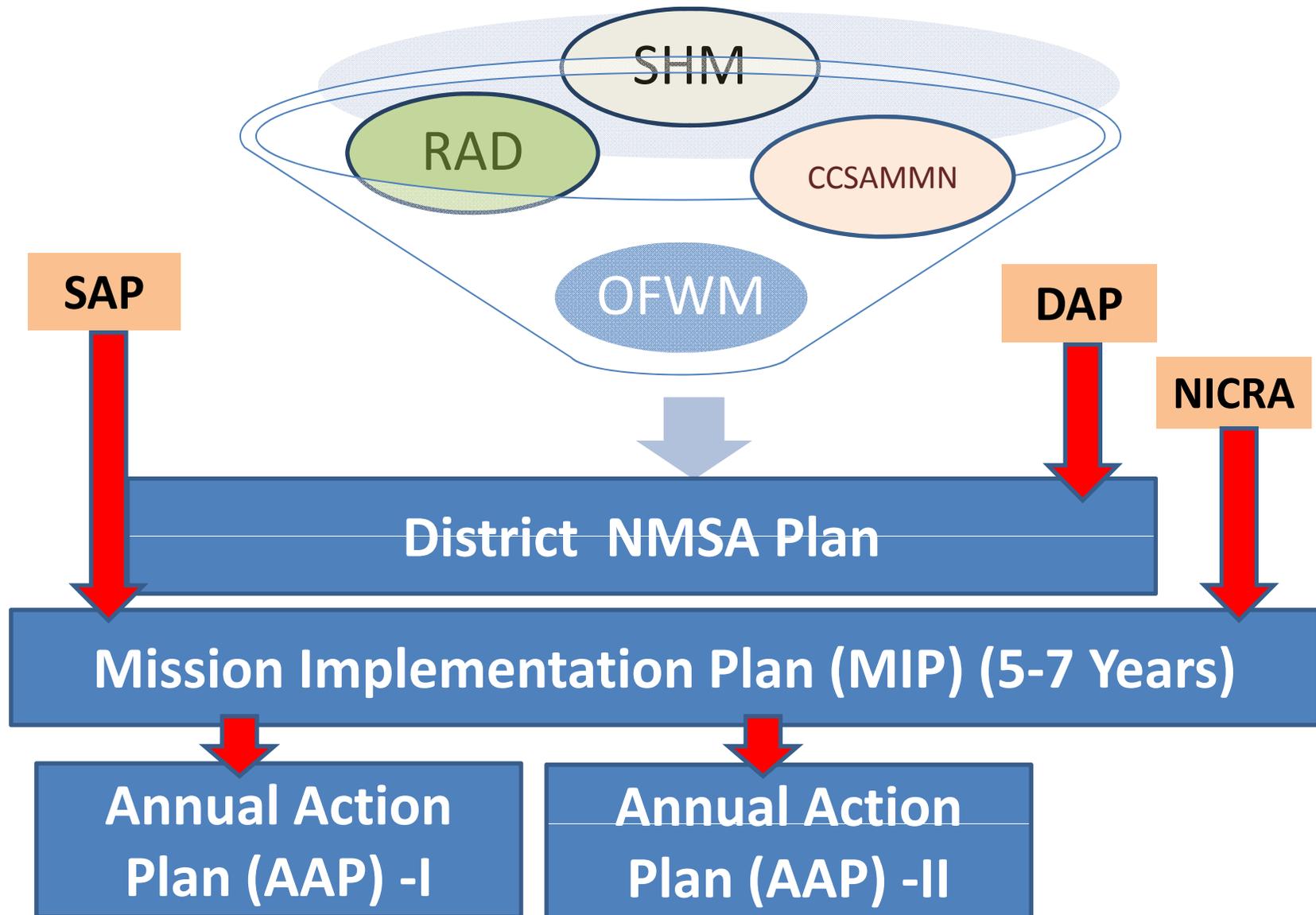
Implementation & Monitoring Structure

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Project Preparation

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Cost Norms & Pattern of Assistance

Engagement of Consultants

Formats

- Annual Action Plan
- Cluster Based Reporting
- SCSP & TSP Reporting

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