

NIRD; RKVY Monitoring Unit

Analytical Report on Arunachal Pradesh SAP

1. Name of the State

Arunachal Pradesh

2. What target the State decided to achieve using RKVY assistance during 11th Five Year Plan (FYP) for the agriculture sector as a whole and for the sub sectors?

The SAP states the targets during 11th Five Year Plan (FYP) for the agriculture sector as a whole and for the sub sectors under its given *vision for development*. The State decides to achieve a growth rate of 4 per cent for the agriculture sector as a whole during 11th Five Year Plan (FYP). Targets decided under the agriculture sub sector include, converting 30 per cent of 109,500 hectare (ha) area under shifting cultivation (constituting 41 per cent of the *Gross Cropped Area* of the State) into permanent cultivation; converting 50 per cent of mono-cropped area to double cropped area (the *mono-cropped area* constitutes 70 per cent of the *Net Cropped Area* of the State); to cover 25 per cent of 209,500 ha of *Net Sown Area* under the use of *HYV* seeds, irrigation and fertilizers; increasing cropping intensity from 129.6 per cent at present to 150.0 per cent; increasing the fertilizer and agrochemical consumption levels (in **kg/ha**) from 3.42 and 0.88 to 6.00 and 1.00, respectively; and increasing farm family-income growth rate, from average of 9.36 per cent during 1999-00 to 2005-06, to 12 per cent per annum. For other sub sectors, the State decides to increase farming of animal husbandry, fishery and sericulture on commercial mode by 15 per cent. For animal husbandry sub sector, the State decides to introduce 15 per cent of cross-bred cows and double the milk production from 133 MT during 2006-07. For fisheries sub sector, the State decides to increase the area under fish farming by 100 per cent. The State also decides to motivate farmers towards high-value crops/enterprises including *bamboos, medicinal & aromatic plants, floriculture, ornamental fisheries, small tea gardens* etc. and to provide information on *market, price, demand, technology* etc., but it misses to quantify the targets. The SAP gives its projections of physical targets emanating from *Gram Panchayat Agricultural Planning Units* (PAPU), *Block Agricultural Planning Units* (BAPU) and *District Agricultural Planning Units* (DAPU) under two distinct categories i.e., *income-generating (IG) activities* and *agriculture & allied sector infrastructure & support services*. Further, the SAP classifies the activities proposed under *agriculture & allied sector infrastructure & support services* at PAPU, BAPU, DAPU and State-levels into 17 *Areas of Focus*, for availing RKVY assistance as per the *Planning Commission* guidelines. The SAP states targets under RKVY (relating to 17 different areas of focus) that include, 38 *Seed farms* of 0.4 ha size, 39 *Agri demonstration plots* of 0.4 ha size, 35 *Farmers training centres*, 77 *Farmers clubs* and 13 *Farmer schools* (under *Integrated Development of major food crops*, Rs 11.33 crore); 232 *Power tillers* and 188 *Hydroger* farm equipments (under *Agri Mechanization*, Rs 5.03 crore); *Land development* in 11002 ha (under *Assistance for development of land*, Rs 131.71 crore); 539 *Godowns*, 43 *Cold storages* and 546 *Grainage houses* (under *Market infrastructure*, Rs 331.39 crore); 4012 kms. of *Agri link road* (Rs 601.80 crore), 506 *Agri bundh* (Rs 12.65 crore), 5410 kms of *Irrigation canal* (Rs 621.07 crore), 9000 ha of *Area expansion by Land Terracing* (Rs 90 crore) under the *Innovative Schemes*.

3. Which method (Method 1 or Method 2) is used for the preparation of SAP? How integration (methodology) of C-DAPs and prioritizing major interventions was done to prepare SAP?

Though, the SAP is not explicit on the type of method (Method 1 or Method 2) used for its preparation, yet it indicates use of a combination of the two methods. The SAP clearly states that its preparation is based on sourcing information from the farming families, Self Help Groups (SHGs) and other social organizations (*taking their choices/opinions for most-promising income-generating activities and need-assessment for infrastructure and services having direct bearing in the development and growth of agriculture & allied sectors IG activities*) along with involvement of members/officials of BAPU and DAPU; this indicates about following *bottom-up* approach in the preparation of the SAP which matches with the use of Method 1 (*the State Nodal Agency/Agriculture Department takes the draft DAPs from the districts at the first instance to ensure appropriate capture of the State's priorities w.r.t. agriculture and allied sectors in the C-DAPs so that their integration in to the SAP meet priorities, targets and resources of the State*). However, facts such as involvement of same *Technical Support Institution* (i.e. NIRD-NERC Guwahati) in preparing both C-DAPs and SAP, and inclusion of the State departments of *agriculture, horticulture, textile & handicraft, animal husbandry & veterinary, fishery and water resource development* in the preparation of C-DAPs/SAP, point to the use of Method 2. The SAP describes in detail the methodology for the preparation of the C-DAPs, but misses to give the same for the SAP. Hence, it is not explicit on the integration (methodology) of C-DAPs and prioritizing major interventions to prepare the SAP. However, the SAP does state that the *State Agricultural Plan* is the outcome of compilation, integration and consolidation of the *Plans* prepared at the district level. The resource-requirement for the *Plan* (Rs 319,753.77 lakhs), as stated in the SAP, is based on investments requirement for all 91 promising IG activities emanating at the PAPU-level and all 98 activities/items emanating from *need-assessment of infrastructure & support facilities of agricultural & allied sectors* at PAPU-level in the State; this approach misses prioritization of interventions. Similarly, total investment requirement mentioned under RKVY (Rs 178,964.27 lakhs) is based on investments requirement for all 98 and 73 activities/items emanating from *need-assessment of infrastructure & support facilities of agricultural & allied sectors* at PAPU-level and at BAPU/DAPU-level, respectively. The SAP does state about *identification of 5 choices for promising IG activities and 3 choices for assessed needs of infrastructure & services for agriculture & allied services at the village-level*; besides this, a prioritization of major interventions is not explicit in the SAP. Further, though the SAP also gives physical & financial targets for 31 activities which are identified at the State-level (Rs 16962.20 lakhs) presumably under RKVY, yet it does not include it in the stated fund-requirements under RKVY (Rs 178,964.27 lakhs).

4. Whether SAP has critically analyzed and clearly stated the agricultural situation of the state vis-à-vis its districts through a SWOT analysis covering agro-climatic conditions, natural resources, infrastructure, institutions, technologies, manpower etc.

The SAP has attempted to analyze and state the agricultural situation of the state through a SWOT analysis covering agro-climatic conditions, natural resources, infrastructure, institutions, technologies, manpower etc. The major strengths include, favourable agro-climatic conditions for growing wide range of agricultural and horticultural crops, vast availability of land for agriculture, use of traditional/local technology and tools involving low input-use with less destruction, cultivation of off-season vegetables, nearly all agricultural production is organic, suitable land with low to moderate slope and with perennial water resources for development of sericulture food plants garden, agro-climatic conditions favourable for growing castor plants for *Eri* and *Som* and

Shaulu for *Muga*, perennial water resources in streams are plenty for irrigation development, availability of plenty of green-fodder along with favourable agro-climatic conditions for growing wide varieties of fodder grasses and rearing of livestock species, and agro-climatic conditions favour rearing of various subtropical to temperate fishes. The weaknesses include, lack of connectivity, infrastructure and support facilities rendering the movement of goods, services and people, extremely hindered; inadequate numerical strength of human resources vis-a-vis availability of natural resources; low literacy and education level; lack of exposure of people to new development and opportunities; lack of use of advanced agricultural technology, less productive and high labour-intensive local technology in use; laboratory, godown, nursery, information centre and other such infrastructure are either absent or of very limited existence; farmers' capital base to develop land (terrace) and to adopt advance technology very low and limited access to financial resources. The opportunities include very high demand for organic and horticultural products (including off-season vegetables) in outside market, enabling remunerative prices; very high demand and high prices for *eri* and *muga* yarn in outside market with less competition; and high demand and prices for fish products; and high demand and price of ornamental fishes. The threats include, high price-competition for agricultural, horticultural and fishery products in the outside market, natural calamities like landslide that disturb the flow line and frequent crop damage by wild animals due to large forest cover in most parts.

5. Whether Convergence- inter and intra department/programmes- been attempted and what is the extent of convergence? Have all potential options for convergence been identified and explored?

Attempts towards convergence of inter and intra department/programmes are **not** explicit in the SAP. However, the SAP indicates that it may use the available funds under MGNREGS, SGSY, PLP of NABARD and other such schemes for supplementing some portion of resource gap between total fund requirement and *expected inflow of resources*. Further, the SAP also states under the *methodology of the C-DAP* that the potentials for development and infrastructure needed to support development are to be treated as goals to be achieved with the available flow of resources and additional resources under RKVY. But the SAP misses to substantiate its intent with evidence. Also, while referring to the *State Policy (2001) on Agriculture*, the SAP indicates about its intention for regular monitoring and evaluation of all schemes implemented by *Agriculture & allied Departments* through appropriate mechanism with an aim to avoid duplication of programmes/works by different functionaries. Further, the SAP is not explicit on identifying and exploring all potential options for convergence.

6. Has the experience of on-going CSS and state schemes been studied and lessons learnt have been incorporated in SAP/C-DAPs for replication/ expansion/ modification in uncovered areas?

It is not explicit in the SAP that whether the experience of on-going CSS and state schemes has been studied and lessons learnt have been incorporated in SAP for replication/ expansion/ modification in uncovered areas. However, the SAP gives lists of major development programmes by sector under on-going CSS and state schemes.

7. Whether the yield gaps and returns in different crops/livestock/fisheries have been estimated?

The SAP mentions about sourcing information on *present scenario of productivity pertaining to agriculture & allied activities* from farming families, SHGs and other social organizations at grass-root/village level, during the process of preparing C-DAPs/SAP. The SAP also gives information on yields for various crops (such as *Paddy, Maize, Millet, Wheat, Pulses, Oilseed, Potato, Ginger,*

Turmeric and Chilli) at the district-level for year 2006-07 and at State and national levels for years 2006-07 and 2007-08 years. Further, the SAP grades the districts according to their yield-levels (in year 2006-07) and categorizes them into four categories of *High, High Medium, Low Medium* and *Low* yields after comparing with the State-average, with respect to each important crop. A table (sourced from the State Agriculture Department) given in the SAP depicts *State average yield vis-à-vis national average yield* for the above mentioned crops for years 2006-07 and 2007-08; *it also indicates target-yield against each crop for year 2008-09*. It is also implicit in the SAP that the *productivity demonstrated by the progressive farmers and entrepreneurs* is preferably used as the productivity per unit of production (instead of using average productivity-levels) for fixing the cost of investment per unit of production and the resultant return to investment; the SAP states that 4 per cent target growth is achievable only by use of productivity-levels of progressive farmers and entrepreneurs. But the SAP misses to give a systematic yield-gap analysis in terms of progressive farmers' yields and the average yields. However, it gives yields for different crops/livestock/fisheries/sericulture pertaining to *productivity demonstrated by the progressive farmers and entrepreneurs*.

8. How the technological and agronomic gaps were identified to contribute to yield gaps?

The technological and agronomic gaps are identified to contribute to yield gaps through eliciting information from farmer families, SHGs and other social organizations at village *Panchayat* level in a participatory approach, on their choices for promising IG activities and their assessment of need for infrastructure and support services for agriculture & allied sectors. This is supplemented by assessment of needs for infrastructure & support services for agriculture & allied sectors by officials of agricultural department at BAPU/DAPU level. Further, the State agricultural department also identifies activities of significant importance for development of agriculture & allied sectors in the State.

9. How the identified constraints are adjudged responsible for low crop productivity in general and specific crops in particular? Is it an opinion or stated on the empirical basis?

The SAP states that the information/data relating to people's choice on promising IG activities and their assessed needs for infrastructure & support services for agriculture & allied sectors is obtained at village *Panchyat* level from farmer families, SHGs and other social organizations. The obtained information on infrastructure & support services for agriculture & allied sectors is both assessed and supplemented by the local BAPU/DAPU officials. The whole exercise is said to involve participatory approach. Thus, adjudging the identified constraints responsible for low productivity definitely involves taking opinion from the stakeholders; however an empirical basis is not evident.

10. How the interventions are identified to bridge the gaps in productivity levels?

The SAP states that the information/data relating to people's choice on promising IG activities and their assessed needs for infrastructure & support services for agriculture & allied sectors is obtained at village *Panchyat* level from farmer families, SHGs and other social organizations. The obtained information on infrastructure & support services for agriculture & allied sectors is both assessed and supplemented by the local BAPU/DAPU officials. We anticipate the role of these exercises in identifying the interventions to bridge the gaps in productivity levels. Further, the SAP also highlights the policy objectives under *new State Policy (2001) on Agriculture* that are said to accord top priority for increasing incomes for farmers; we also anticipate it has contributed to identifying interventions to bridge the gaps in productivity levels.

11. Whether the right strategies have been prioritized to bridge the yield gaps in crop/livestock/fisheries and maximize returns to farmers have been clearly spelt out? Whether the empirical basis for appropriate strategies provided? How far they have been obtained/decided through a consultative process with all the relevant stake holders?

Prioritization of strategies to bridge the yield gaps is not explicit in the SAP. The SAP is a product of participatory bottom-up exercise that involves taking choices at village level on promising IG activities and assessment of needs for infrastructure & services support for agriculture & allied sectors that are then assessed and supplemented by officials at BAPU/DAPU level. Further, important activities for development of agricultural & allied sectors are identified at State level also. The SAP, in fact, seems to have adopted all the 'choices' proposed under the C-DAPs, though prioritization of choices/interventions is evident at the village level when a maximum of five promising IG activities and 3 assessed needs on infrastructure & support services for agriculture & allied sectors, are selected at the village-level. Empirical basis for strategies is not evident. However, since the preparation of the SAP is based on participatory approach, therefore it is implicit that they have been obtained/decided through a consultative process with all the relevant stakeholders.

12. Whether the prioritized strategies have been translated into programmes/projects/activities by sectors and years with clear cut objectives, targets, output, outcome, funding (RKVY, other sources) for each project? Whether the viability of each project to achieve the expected output considered?

The SAP attempts to translate the strategies/interventions related to the assessed needs for agricultural & allied infrastructure & support services at PAPU level (98 activities at a cost of Rs 1692.38 crore) and BAPU/DAPU level (73 activities at a cost of Rs 97.25 crore) into programmes/projects/activities (136 number) under 17 areas of focus that are eligible for assistance under RKVY guidelines. However, it misses to give the same treatment to the 91 IG activities (total cost Rs 1505.14 crore) also emanating at the PAPU level; *that is to say the SAP has not translated the IG activities to projects/activities under 17 focus areas eligible for assistance under RKVY guidelines.* The given 136 activities, that form part of the 17 focus areas/programmes and that have originated from the exercise of need assessment of infrastructure & support services for agriculture & allied sectors (at PAPU and BAPU/DAPU levels), are provided with physical target, unit cost and the funding requirement, pertaining to each of the activities; however they are not given by years and do not involve objectives, output and outcome. These are presumably prepared, targeting the RKVY funding; no other source of funding is explicit. However, the SAP separately gives an account of year-wise *Physical* and *Financial* targets for 91 IG activities (emanating from PAPU level), 95 assessed needs on infrastructure & support services for agricultural & allied sectors at PAPU level, 73 assessed needs on infrastructure & support services for agricultural & allied sectors at BAPU/DAPU level and assessed needs on infrastructure & support services for agricultural & allied sectors at the State level; but the source of funding (whether RKVY or others) is not explicit for these. The SAP gives output and outcome for 44 promising IG activities that form part of those 47 promising IG activities that share 98 per cent of the total choices made in the State (the remaining 54 IG activities being of lesser preference in the context of the State with a share of only 2 per cent of total choices); the SAP gives *expected volume of production, expected gross income* and *expected net income* for each of these 44 promising IG activities. But, the SAP misses to give the output and outcome in a similar manner for

needs assessed on infrastructure & support services for the agriculture & allied sectors at PAPU level and at BAPU/DAPU level. However, the SAP gives *expected return from total investment* (aggregate for the IG activities and the infrastructure & support services for agriculture & allied sectors). As regards considering the viability of each project to achieve the expected output is concerned, the SAP states that the size of the IG activities has been fixed at that level at which each unit is economically viable while generating employment and sufficient income to the operation. Further, productivity per unit of production, cost of investment per unit of production and resultant return to investment have been worked out in the SAP; it states that for working out gross income, net income and return on investment, the productivity level per unit of production and current price of the products in local markets have been used. Thus, it is evident that viability of proposed IG activities to achieve expected output has been considered, though the same is not explicit in the case of need assessed for infrastructure & support services for agriculture & allied sectors; however the SAP states that unit cost of infrastructure and support services have also been worked out.

13. Have border areas/ insurgent areas/problem areas (mining, acidic soils etc) have been addressed by formulating any specific projects?

As such, the SAP is not explicit on formulation of specific projects addressing border areas/insurgent areas/problem areas insurgent areas/problem areas. However, the SAP incorporates *Land development* project/activity (Rs 110.02 crore) under programme/focus area (RKVY) *Assistance for development of land*; the project targets land development in 11002 ha area. Further, the SAP prepares 18 number of *soil testing labs* under programme *Enhancement of soil health*. The proposed projects are useful in the light of the fact that soil of the State is mostly acidic (pH value ranges from 4.0 to 7.6) and the soil-loss/erosion in the State is quite high, ranging from 50 to 150 tons/ha/year. Particularly, 30 million tons of soil is eroded and lost annually in three districts (Changlang, Upper Siang and East Siang); soil-loss of 10 to 20 million tons per annum takes place in 7 other districts.

14. What is the mismatch (difference between estimated budget in SAP/C-DAP and the approved and used budget) between the projections and funding in SAPs/C-DAPs and the projects(difference between planned projects in SAP/C-DAP and approved projects and funding being implemented? How this mismatch affects the targets, expected outputs/outcomes/growth impact?

The SAP estimates a total budget of Rs 3294.78 crore (that involves Rs 1505.14 crore under IG activities *emanating at PAPU level* and Rs 1789.64 crore under agriculture & allied infrastructure & support services *emanating at PAPU and BAPU/DAPU levels*) for the 11th FYP. The year-wise break-up of the total budget estimate for years 2007-08 to 2011-12 is Rs 752.59 crore (2007-08), Rs 666.15 crore (2008-09), Rs 644.92 crore (2009-10), Rs 621.70 crore ((2010-11) and Rs 623.41 crore (2011-12). The approved budget is available for the State for the first four years (2007-08 to 2010-11) of the 11th FYP. The total approved amount sums up to Rs 64.91 crore (*as per RKVY website document*); its year-wise break-up is Rs 2.85 crore (2007-08), Rs 6.88 crore (2008-09), Rs 16.10 crore (2009-10) and Rs 39.08 crore (2010-11). There is a gap of Rs 3229.87 crore (98.03 per cent) between the estimated budget of Rs 3294.78 crore for 5 years (2007-08 to 2011-12) and the approved budget of Rs 64.91 crore for 4 years (2007-08 to 2010-11. On yearly basis, there are gaps of Rs 749.74 crore (99.6 per cent), Rs 659.27 crore (98.97 per cent), Rs 628.82 crore (97.50 per

cent) and Rs 582.62 crore (93.71 per cent), for years 2007-08, 2008-09, 2009-10 and 2010-11, respectively. Since the mismatch is quite large (over 90 per cent of the proposed allocations), it is expected to severely affect the targets, expected outputs/outcomes/growth impact.

However, the SAP in a statement of *Resource Requirement, Expected Inflow and Gap*, states that there are *Expected Inflow of Resources* pertaining to each year of the *Plan* (it does not mention the source for it). The SAP balances the *Expected Inflow of Resources* against the *Total Requirement of funds* for each of the five years. The total *Expected Inflow of Resources* (for 5 year period) is Rs 532.83 crore and its break-up for five years is Rs Rs 85.18 crore (first year), Rs 94.74 crore (second year), Rs 105.37 crore (third year), Rs 117.19 crore (fourth year) and Rs 130.34 crore (fifth year). Adjusting the requirement of funds against the *Expected Inflow of Resources*, the SAP gives *Total Gap* of Rs 2761.95 crore (i.e. Rs 3294.78 – Rs 532.83 crore) for the five year period with break-up for 5 years as Rs 667.41 crore (2007-08, Rs 571.40 crore (2008-09), Rs 539.55 crore (2009-10), Rs 504.51 crore (2010-11) and Rs 493.07 crore (2011-12). If we adjust this *Total Gap* for 5 years as given in the SAP (obtained by balancing *Expected Inflow of Resources* with the *Total Requirement of funds*) with the total approved budget for 4 years (Rs 64.91 crore), we get a total gap of 81.86 per cent (Rs 3294.78 crore – Rs 532.83 crore – Rs 64.91 crore = **Rs 2697.04 crore**); the year-wise gaps calculated in similar manner for each year are, Rs 664.56 crore (88.30 per cent), Rs 564.53 crore (84.75 per cent), Rs 523.45 crore (81.17 per cent) and Rs 465.43 crore (74.86 per cent). Even after factoring in the *Expected Inflow of Resources*, the gaps between the proposed and approved budgets are large enough to significantly affect the targets, expected outputs/outcomes/growth impact.

15. Are the projects/programmes large enough, instead of being small and prolific pilot type schemes, to make a visible (impact) in the sectors?

Yes, the projects/programmes are large enough, instead of being small and prolific pilot type schemes, to make a visible (impact) in the sectors. For example, among projects/programmes emanating from the *needs assessed for infrastructure & support services for agricultural & allied sectors* at PAPU and BAPU/DAPU levels, the large projects include, project *Land development* (Rs 110.02 crore) under programme *Assistance for development of land* programme; projects *Godowns* (Rs 45.28 crore), *cold-storage* (Rs 215.0 crore), *Agriculture store* (Rs 23.35 crore) and *market-shed* (Rs 31.40 crore) under *Market Infrastructure* programme; projects *Afa quarter* (Rs 15.05 crore) and *Veterinary aid centre* (Rs 10.10 crore) under *Infrastructure for Extension Services* programme; and projects *Agri link road* (Rs 601.80 crore), *Agri bundh* (Rs 12.65 crore) and *Irrigation canal* (Rs 621.07 crore) under *Innovative schemes* programme. Also, many large projects under *IG activities* are proposed in the SAP. For example, *Paddy cultivation* (Rs 53.24 crore), *Ginger cultivation* (Rs 65.89 crore), *Potato cultivation* (Rs 54.18 crore), *Tea cultivation* (Rs 37.36 crore), *Tomato cultivation* (Rs 35.61 crore), *Sugarcane cultivation* (Rs 43.43 crore), *Piggery farming* (Rs 134.17 crore), *Dairy farming* (Rs 170.26 crore), *Poultry farming* (Rs 42.34 crore), *Mithun rearing* (Rs 52.37 crore), *Orange cultivation* (Rs 137.70 crore), *Banana cultivation* (Rs 131.85 crore) and *Large cardamom cultivation* (Rs 64.05 crore).

16. Has the SAPs identified Flagship programmes (extensive to cover large part of the state and larger area)?

The SAP does not make a formal mention of the *Flagship programmes*. However, many programmes proposed during the 11th FYP are large enough (and presumably extensive also) to qualify as *Flagship* program. For example, *Integrated development of major food crops* programme (Rs 11.30 crore), *Assistance for development of land* programme (Rs 131.71 crore), *Market Infrastructure* programme (Rs 331.39 crore) and *Irrigation canal* project (Rs 621.07 crore). Further, the SAP also identifies many projects at the State level which the State government considers to be very important for the development of agricultural sectors. Among the projects identified at the State level, some are shown (in the SAP) to cover all sixteen districts (or large part of the State), such as *development of wayside sheds for fruits & vegetable* (Rs 17.25 crore), *preparation of soil profile* (Rs 16.00 crore) and *area expansion by Land Terracing* (Rs 90.00 crore).

17. Whether sectoral and spatial allocation of funds conforms to equitable and optimal distribution of resources?

The SAP gives *total investment requirement* (in IG activities and infrastructure) for 11th FYP as Rs 3197.54 crore, along with the sectoral break-up. However, the SAP misses to include in the given amount of *total investment required* (Rs 3197.54 crore), the fund requirement worth Rs 97.25 crore for 73 activities emanating at the BAPU/DAPU level. Its inclusion makes the total budget requirement for the project equal to Rs 3294.78 crore. Further, the given amount of *total investment required* (Rs 3197.54 crore) also does not include projects/programmes proposed at the State level worth Rs 169.62 crore. If we add proposals identified at the State-level (Rs 169.62 crore) and at BAPU/DAPU level (Rs 97.25 crore) to the given amount of *total investment required* (Rs 3197.54 crore), the total budget requirement actually increases to Rs 3464.40 crore. Though the SAP does not include the State level proposals for stating sectoral allocations of total required funds, yet it gives them (*State level proposals worth Rs 169.62 crore*) according to the 17 focus areas/programmes stated in the *Planning Commission* guidelines for making the State eligible for assistance under RKVY. Since the given figure of *total investment requirement* (Rs 3197.54 crore) (for which sectoral break-up is available) is 92.23 per cent of the *calculated* overall budget requirement of Rs 3463.40 crore (that includes budgets required at BAPU/DAPU and State levels), we analyse the sectoral allocation of funds with respect to the given *total investment requirement* of Rs 3197.54 crore for which sectoral break-up is given. The SAP makes highest budget-allocation of Rs 1,402.90 crore for the *Agriculture* sector which is 43.87 per cent of the total investment required. The highest share for the *Agriculture* sector is warranted as the sector is a major rural employer and source of State income; growth in *agriculture* tends to be pro-poor while harnessing rural people's key assets of land and labour and creating a vibrant economy in rural areas, resided by majority of poor population of the State. Further, efforts towards increasing the low agricultural production of the State (that includes major crops like *Paddy, Maize* and *Potato*, the productivities of which are less than the national average) shall be useful in strengthening food security besides increasing farmers' income. The SAP allocates second highest share of 19.75 per cent (Rs 631.53 crore) to the *Water resources/Irrigation & flood control* sector. The allocation is appropriate as the hill-State frequently faces occurrences of heavy rainfall, landslides and floods; it needs creation of extensive irrigation facilities so as to minimize the dependence on nature. Further, being an agrarian State, irrigation is vital input for the growth of agricultural & allied sectors in the State. The SAP allocates 14.52 per cent (Rs 464.19 crore) in the estimated budget to the *Horticulture* sector; the agro-climatic conditions of the State are favourable for cultivation of a wide variety of high-value horticultural crops that entail huge potential for income/employment generation. The SAP proposes 13.34 per cent share (Rs 426.49 crore) towards *Animal Husbandry & Veterinary* sector. The allocated amount is quite appropriate as livestock sector plays an important

role in the socio-economic development of rural masses of the State; three-fourth of the total population and almost 100 per cent of the rural households own livestock in the State. Further, poultry and dairy products are an important source of nutrition for the vast tribal/rural population, besides a reliable source of income due to increasing demand of livestock products. The SAP allocates 7.85 per cent to the *Fishery* sector. The allocation share is appropriate as the State has ample scope for the development of this sector which provides opportunities for self employment and income generation in rural areas; the State has 7000 ha of aquatic resources of which only about 31 per cent has been utilized. The SAP proposes 0.65 per cent (Rs 20.78 crore) for *Sericulture* sector. The allocation is appropriate as it is expected to support rural cottage industries by motivating rural entrepreneurs in post-cocoon activities and production of quality silk/cocoon for both internal market and exports. The SAP proposes 0.02 per cent (0.71 crore) for the *Forestry* sector. The SAP does well to recognize the significance of the *Forestry* sector by assigning it an allocation share (though small in size). About 62 per cent of the State's geographical area comprises of forests; forests are a useful source of *firewood* along with other products like *cane* and bamboo, supporting the lives of the State's people. Among the *Infrastructure and Support Facilities* category (Rs 1,692.40 crore) of the *total investment requirement* (Rs 3197.54 crore), the *Agriculture* sector has been allocated higher share of 61.38 per cent (Rs 1038.82 crore) while *Water resources/Irrigation & flood control* has been allotted 37.32 per cent (Rs 631.53 crore). This indicates special thrust of the SAP in development of infrastructure & support facilities for the *Agriculture* and *Water resources/Irrigation & flood control* sectors, necessary for growth of agriculture & allied sectors in the hill-State. On the basis of fund allocation by focus-area (given only with respect to the *infrastructure and support services for agricultural & allied sectors*), the highest allocation share of 18.41 per cent (Rs 360.69 crore) has been given to the *Market Infrastructure* focus area out of the given total budget of Rs 1959.21 crore (which includes Rs 169.57 crore worth of State-level proposals and Rs 1789.64 crore worth of PAPU & BAPU/DAPU level proposals); the second and third highest allocation shares belong to *Assistance for development of land* (6.72 per cent) and *Infrastructure for Extension Services* (2.31 per cent), respectively. Thus, we conclude that the sectoral allocation of funds conforms to equitable and optimal distribution of resources. The spatial allocation of funds also conforms to equitable and optimal distribution of resources as the *coefficient of correlation* between *population* and the *budget allocation share* with respect to all 16 districts of the State is moderately positive (+ 0.52).

18. Are there any innovative projects? If so, how do they contribute to fulfill the special needs outside ongoing programs?

Yes, the SAP proposes a number of innovative projects. It translates the *innovative* needs assessed at the PAPU-level into projects under focus area *Innovative schemes* for fulfilling the eligibility criteria for RKVY assistance, as per the *Planning Commission* guidelines. The projects include, *Agri link road* (Rs 601.80 crore), *Agri bundh* (Rs 12.65 crore), *Irrigation canal (brick)* (Rs 621.07 crore), *Check dam* (Rs 1.58 crore) and *Minor irrigation channel brick* (Rs 6.73 crore). These projects have actually emerged at the PAPU-level and they are recommended by a large number of villages (Gram Panchayats); for example, the *Irrigation Canal* (1075 villages) and *Agri link road* (853 villages). Though the SAP is not explicit on the contribution of these projects to fulfill the special needs outside ongoing programmes, it is implicit that the proposed innovative projects are expected to play a key role in strengthening the infrastructure (such as roads and irrigation), vital for the growth of agricultural & allied sectors.

19. What is the basis of planning certain projects for the State as a whole and how do they get monitored?

The SAP states that besides the given activities/components identified at PAPU, BAPU and DAPU levels, other activities of much importance for the development of agricultural & allied sectors for the State have been identified at the State level. The SAP proposes a budget of Rs 169.62 crore for the activities/projects identified at the State level; it comprises of those projects that the State agricultural department considers to be of significant importance for the State and which have either been missed or inadequately reflected in the proposals made at PAPU, BAPU and DAPU levels. These include projects like *Establishment of soil testing laboratories (New)* and *Strengthening of soil testing laboratories* under focus area *Enhancement of soil health* (Rs 4.64 crore); *development of wayside sheds for fruits & vegetable* (Rs 17.25 crore) and *Refrigerated VAN* under *Market Infrastructure* focus area (Rs 29.30 crore); and *Agriculture Planning and Information Bank* and *Area Expansion by Land Terracing at 10 to 20 % land slope* under focus area *Innovative schemes* (Rs 113.90 crore).

20. What is the basis of sectoral fund allocation? Is it based on expected marginal contributions? Any viability analysis is made?

The basis of sectoral fund allocation is the unit cost of investment and the number of such units, pertaining to each of the *IG activities* and *Infrastructure & Support services for agricultural & allied sectors*, selected/identified at PAPU and BAPU/DAPU levels. Over 97 per cent (Rs 3,197.54 crore) of activities/projects have emanated at PAPU level; total proposed budget by involving PAPU and BAPU/DAPU levels together is Rs 3,294.78 crore. The whole exercise at PAPU level is based on tapping 5 most promising IG activities and 3 assessed needs for infrastructure & support services for agriculture & allied activities per village from farmer families, SHGs and other social organizations at the village level. The use of *expected marginal contributions* as basis of sectoral fund allocation is not explicit in the SAP. However, viability analysis is indicated to have been involved in the process of identifying IG activities at the PAPU level; *the SAP states that the size of the IG activities has been fixed at that level at which each unit is economically viable while generating employment and sufficient income to the operation.*

21. Whether the allocations across years were right? What was the basis for yearly allocations?

The SAP allocates 22.61 per cent (Rs 786.51 crore), 20.13 per cent (Rs 700.06 crore), 19.52 per cent (Rs 678.83 crore), 18.85 per cent (Rs 655.61 crore) and 18.90 per cent (Rs 657.33 crore) for first, second, third, fourth and fifth years of the FYP, respectively. The proposed allocation share is highest for the first year and decreases in subsequent years, reaching minimum in the fourth year, thereafter it rises slightly in the last year of the Plan. This does not fit with the prudent norm of allocation. Hence, the allocation across years cannot be said as right. Ideally, the allocation share should be minimum in the first year, being the planning stage for the project/s involving comparatively less investment capacity; the allocation share should increase in the intermediate years as subsequent years demand higher investments for the execution of the planning; and allocation share should decline in the last year because having invested sufficiently in the in-between years, the fund requirements again become low in the last year of the plan-period. Further, the basis for yearly allocation is not explicit in the SAP.

22. Is the SAP in line/ tune with overall agricultural strategy and goals of the country/ state?

The SAP seems to be in line/ tune with the overall agricultural strategy and goals of the country/ state. Following the basic spirit of RKVY scheme (that stresses on origination of project-proposals at village-*Panchayat* level, in a bottom-up approach), the SAP predominantly incorporates proposals emanating at the PAPU level. It proposes both the *income generating* activities and the *infrastructure & support services for agriculture & allied sectors*. The purpose is to increase farmers' income/employment and an integrated growth in the agriculture & allied sectors. The SAP gives special thrust on development of *infrastructure & support facilities for the Agriculture sector* and the *Water resources/Irrigation & flood control sector*. These are expected to contribute towards country's aim of achieving 4 per cent growth rate during 11th FYP.

23. Whether mechanisms for planning, baseline information collection, monitoring, documentation and regularly reporting progress are clearly spelt out?

It is not explicit from the SAP that whether mechanism for planning, baseline information collection, monitoring, documentation and regular reporting progress are clearly spelt-out. However, the SAP is explicit on the presence/constitution of three tiers/levels of planning units in the State as per the Planning Commission guidelines, i.e. *District Agricultural Planning Unit (DAPU)*, *Block Agricultural Planning Unit (BAPU)* and *Gram Panchayat Agricultural Planning Unit (PAPU)* using 1779 *Gram Panchayats*, 94 *RD Blocks* and 16 *Districts*, in the State. Further, while referring to the *State Policy (2001) on Agriculture*, the SAP indicates about its intention for regular monitoring and evaluation of all schemes implemented by *Agriculture & allied Departments* through appropriate mechanism with an aim to avoid duplication of programmes/works by different functionaries.

Directions for 12th FYP

1. Whether the planning, monitoring and evaluation mechanisms exist, functional and made use of to fulfill the expectation and bridge the gaps? If not, what is the plan for strengthening PME mechanisms and making them functional during the remaining years of 11th FYP and 12th FYP when it gets launched? Whether the baseline information is maintained for comparison of performance of the project later?

The SAP is not explicit on whether the planning, monitoring and evaluation mechanisms exist, functional and made use of to fulfill the expectation and bridge the gaps. Further, the SAP is not explicit on the plan for strengthening PME mechanisms and making them functional during the remaining years of 11th FYP and 12th FYP, when it gets launched. Also, it is not explicit on whether the baseline information is maintained for comparison of performance of the project later. However, the SAP is explicit on the presence/constitution of three tiers/levels of planning units in the State as per the Planning Commission guidelines, i.e. *District Agricultural Planning Unit (DAPU)*, *Block Agricultural Planning Unit (BAPU)* and *Gram Panchayat Agricultural Planning Unit (PAPU)* using 1779 *Gram Panchayats*, 94 *RD Blocks* and 16 *Districts*, in the State. Further, while referring to the *State Policy (2001) on Agriculture*, the SAP indicates about its intention for regular monitoring and evaluation of all schemes implemented by *Agriculture & allied Departments* through appropriate mechanism with an aim to avoid duplication of programmes/works by different functionaries.

2. Whether the mid-term evaluation by the external agency is done for change of the targets and inter-sectoral resource adjustments?

The SAP is not explicit on the mid-term evaluation by an external agency.

3. Is social audit done to facilitate publicity on status of the implementation and maintenance of transparency?

It is not mentioned.

4. What are the major lessons from RKVY implementation in the State for the 12th FYP?

(i) The SAP should provide funding details under various CSS and State-level schemes (including RKVY) along with their respective share of funding, for all the projects. If not given, analyzing the extent of convergence of existing schemes with the RKVY will be difficult. Convergent approach within the sector and outside the sector should be attempted, particularly with MGNREGS to avoid duplication in respect of soil and water harvesting and conservation. MGNREGS resources can be tapped for this. Instead the SAP should come out with more interventions to concentrate on cropping and production systems including horticulture, livestock and fisheries in areas that have been developed under watershed and NRM.

(ii) Further, the SAP should state programmes/projects/activities by sectors and years with clear cut objectives, targets, output, outcome, funding (RKVY, other sources) for each project (including those based on IG activities).

(iii) The main experiences of implementing CSS/State schemes should be summarized and stated whether/how they are made use of to prepare SAP for replication, expansion etc.

(iv) Prioritization of interventions needs to be attempted using standard objective methods.

(v) The mismatch between budget proposal and allocation sanctioned should be minimum - it can be bridged quite a bit if convergence is attempted as indicated in 4.(i) above.

(vi) The project proposals should emanate from Districts preferably Zilla Parishads on the basis of C-DAPs.

(vii) There should be rigorous filtering of proposals by an expert Committee earlier and in SLSC meetings later.

(viii) There should be a dedicated PM&E mechanism at the State level for facilitating project screening, database management, monitoring, evaluation and reporting of RKVY projects.

(ix) The SAP should explicitly give yield-gap & return estimates (comparing average yields with yields of progressive farmers), both at State and district-level, for major crops and other enterprises.

(x) Allocation of funds across years should follow prudent allocation norm.

Overall conclusion

The SAP is quite descriptive and is well attempted. The preparation of the SAP involves participatory bottom-up approach with three levels of *planning* (village, block and district); majority of projects have emanated at village-level with active participation of farmers and SHGs. The SAP comprises of two broad categories of projects, i.e. *income generating activities/projects* and *infrastructure & support services for agricultural & allied sectors*. It states year-wise physical and financial targets for all the projects both at State and at district levels. It attempts a systematic SWOT analysis. The sectoral and spatial allocation of funds is well-balanced; due weight-age is given to all the agricultural & allied sectors. The SAP gives special thrust on development of infrastructure for *Agriculture* and *Irrigation & flood control* sector. However, the SAP needs improvement on various aspects. The SAP is not clear on its total fund-requirements; it misses to include projects identified at the State-level in the given total estimated fund-

requirements. It states the funding requirements under RKVY separately from the total required funding. The requirement of funds should be presented in an integrated and coherent manner. Further, the SAP seems to have included all project proposals emanating at the village-level. The SAP is not explicit on the integration of C-DAPs and prioritizing major interventions to prepare the SAP. Also, the SAP needs to mention its attempts towards attempting convergence with examples. It should provide yield-gap & return estimates (comparing average yields with yields of progressive farmers), both at State and district-level, for major crops and other enterprises. The SAP should also attempt to give main experiences of implementing CSS/State schemes. The allocation of funds across years should follow the prudent-norm of allocation. Further the SAP should involve a systematic prioritization of interventions and strategies. The SAP should also make provision for a dedicated PM&E mechanism at the State level for facilitating project screening, database management, monitoring, evaluation and reporting of RKVY projects. These points require priority attention during 12th FYP.