

## NIRD; RKVY Monitoring Unit Analytical Report on Uttarakhand SAP

### 1. Name of the State

Uttarakhand

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

The SAP misses to state target (s) for the agriculture as a whole during 11<sup>th</sup> Five Year Plan (FYP) using either RKVY assistance or the overall proposed funding. The SAP mentions targets for various sub-sectors (using overall proposed funding); however, these targets mentioned at sub-sector level are stated more in financial terms than in physical terms. The financial targets that the State has decided to achieve under *agriculture* sub-sector during 11<sup>th</sup> Five Year Plan (FYP) include, *Seed Production Programme* (Rs 1.95 crore), *Production programme of local crops* (Rs 1.40 crore), *Strengthening of Organic Board* (Rs 1.20 crore), *Transfer of technology programme* (Rs 2.20 crore), *Farmers information and advisory centres at Block level* (Rs 2.00 crore), *Strengthening of input stores, training centres & govt. farms* (Rs 2.80 crore), *Distribution of water pumps, agri. implements* (Rs 9.00 crore), *Plant Protection Programme* (Rs 6.33 crore), *Macro Management Agriculture* (Rs 87.52 crore), *Seed Village Programme* (Rs 22.05 crore), *National Programme on organic farming* (Rs 6.00 crore), *Crop Insurance Scheme* (Rs 8.64 crore), *Support to State extension programme for extension reforms* (Rs 15.60 crore), *Promotion of agriculture implements through testing, training and demonstration* (Rs 2.82 crore); **the financial targets under 11<sup>th</sup> FYP are obtained by clubbing given annual proposed outlays for three years belonging to the 11<sup>th</sup> FYP, i.e. 2009-10, 2010-11 and 2011-12; the SAP gives annual financial projections for period 2009-10 to 2014-15.** In physical terms, the SAP proposes to enhance the *Seed Replacement Rate* (SRR) in the State (from present level of 10 to 25 per cent) to 35 per cent and give subsidy ranging between 50 to 75 per cent to farmers for hill-specific agricultural equipments. The financial targets that the State has decided to achieve under *animal husbandry and dairy* sub-sector during 11<sup>th</sup> Five Year Plan (FYP) include, *Cattle including Buffalo Breeding* (Rs 14.10 crore), *Meat animal development* (Rs 6.99 crore), *Poultry Development* (Rs 1.50 crore), *Animal Health including veterinary services* (Rs 4.49 crore), *Animal Health: Prevention of Disease and Control* (Rs 50.20 crore), *Subsidy support for livestock development* (Rs 10.02 crore), *Credit support for livestock development* (Rs 147.11 crore), *Fodder development programme* (Rs 9.00 crore) and *Development of center of excellence of silvi grass land on community land at nyayapanchayat level* (Rs 17.45 crore) (for period 2009-10 to 2011-12); in physical terms, the SAP proposes to expand the *Lalkuan Dairy Plant* capacity from 50,000 to 100,000 liters per day (lpd) and packaging capacity from 20,000 to 40,000 lpd; and establish a new dairy plant at *Rudrapur* in PPP mode with a capacity of 1,00,000 lpd along with milk drying capacity of 10 mtpd. The State sets financial target for the *irrigation* sub-sector as Rs 2513.13 crore during the 11<sup>th</sup> FYP, reflecting an increase of 400 per cent over the actual budget outlay of Rs 499.52 crore during the 10<sup>th</sup> FYP. The financial targets that the State has decided to achieve under *irrigation* sub-sector during 11<sup>th</sup> Five Year Plan (FYP) include, *Construction and renovation of Tubewells* (Rs 185.10 crore), *Construction of Canals* (Rs 350.60 crore), *Construction and renovation of lift schemes* (Rs 39.15 crore), *Restoration of water bodies* (Rs 6.03 crore), *Construction of canal roads* (Rs 25.00 crore), *Command Area Development* (Rs 17.50 crore), *Construction of Hydrams* (Rs 25.74 crore), *Construction of Gules Hauzes, pipelines* (Rs

1778.25 crore) and *Construction of artisan wells* (Rs 2.08 crore); targets mentioned in physical terms include, subsidy for sprinkler and drip irrigation to large/medium farmers, small farmers and marginal farmers, respectively at the rates of 25 per cent, 50 per cent and 75 per cent, to encourage them for switching from flood irrigation to sprinkler/drip irrigation on large scale; to raise irrigation level in hill districts to 33 per cent of the net cultivated area from the present 13 per cent; and constructing 2 kms. of gules in every *Nyayapanchayat* area annually. With a total proposed budget of Rs 131.65 crore (for period 2009-10 to 2011-12), the financial targets that the State has decided to achieve under *horticulture (including sericulture)* sub-sector during 11<sup>th</sup> Five Year Plan (FYP) include, *Processing of Dried fruits/fruits* (Rs 2.09 crore), *Production of Improved quality Planting Material* (Rs 7.38 crore), *Strengthening of State Orchards/Gardens* (Rs 10.15 crore), *Development of Commercial Horticulture through Production and Post Harvest Crop Management* (Rs 9.97 crore), *Fencing of Orchards in the Hills* (Rs 3.21 crore), *Import of Quality Planting Material* (Rs 2.29 crore), *Crop Insurance Scheme* (Rs 1.38 crore), *Promotion of Off-Season Vegetables* (Rs 1.33 crore), *Grant to Uttarakhand Tea Development Board* (Rs 17.37 crore), *Grant to Herbal Research & Development Institute* (Rs 11.30 crore), *various activities under Bhasaj/herbal development* (Rs 7.57 crore) and *various activities under Sericulture development* (Rs 6.87 crore); in physical terms, the SAP proposes to increase in area under fruit crops by 40 per cent (from 1.98 lakh hectares at present), rejuvenation of old orchards to raise their productivity by 20 to 40 per cent and increasing area under vegetable cultivation by 300 per cent and that under off-season vegetable cultivation by 500 per cent, in next five years. Further, the SAP proposes to add 100 new low cost poly-houses in each block with a subsidy up to Rs 50,000 per unit each year, to bring an additional area up to 1,00,000 ha under fruit cultivation through *cluster* approach over next five years, to bring 25,000 ha of cultivable wasteland (out of 3.85 lakh ha waste land) under horticulture each year and establishment of leaf/tissue analysis laboratories in public sector @ Rs 75.00 lakhs per unit. The targets that the State has decided to achieve under *fisheries* sub-sector during 11<sup>th</sup> Five Year Plan (FYP) include, *Promotion of private hatcheries* (Rs 5.60 crore), *Supply of pelletised fish feed at subsidized rate* (Rs 5.00 crore), *Setting up mini fish markets in each district* (Rs 1.20 crore), *Setting up of State level aquarium and water fun park in Dehradun* (Rs 4.0 crore) and a *wholesale fish market project* (Rs 1.0 crore). The financial targets that the State has decided to achieve under *marketing, value addition and food processing* sub-sector during 11<sup>th</sup> Five Year Plan (FYP) include, *infrastructure for value addition for Terminal Markets* (Rs 180.00 crore), *Collection centers* (Rs 13.00 crore), *Central Integrated pack-houses* (Rs 16.30 crore), *Pack houses* (Rs 5.40 crore), *Specialized transport* (Rs 13.50 crore), *Ropeways* (Rs 23.25 crore), *Primary processing units* (Rs 17.20 crore), *Strengthening milk cooperatives* (Rs 34.54 crore), *Cold storages* (Rs 34.00 crore), *Multi chamber cold storage* (Rs 20.39 crore) and *Control atmosphere storage* (Rs 33.02 crore). However, the SAP does mention some projects/activities that it proposes/intends to fund through RKVY assistance. For example, the SAP seeks funds worth Rs 150 crore from RKVY and other central schemes for giving subsidy on fencing horticultural crops (30,000 ha area has been targeted each year). Further, the SAP proposes Rs 1.0 crore (year 2010-11) for strengthening departmental fish farm for capacity enhancement and Rs 5.0 crore (year 2011-12) for supply of pelletised fish feed at subsidized rate to marginal farmers, under RKVY.

**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?**

The SAP misses to give *methodology* used for the preparation of SAP. Also, the SAP is not explicit on integration (methodology) of C-DAPs and prioritizing major interventions to prepare the SAP.

Hence, we cannot comment on the same. However, the SAP gives the district-wise summaries of C-DAPs of each district. The SAP also seems to have taken into consideration the uniqueness of districts while proposing allocations in the SAP. For example, the C-DAP of *Nainital* district mentions the weakness of *highly percolating soils*, besides the problem of not following the soil & water conservation practices in the district; the C-DAP also proposes allocations worth Rs 36.10 crore towards *soil and water conservation*. The SAP responds by allocating Rs 216.78 crore in project *Conservation of water harvesting structures/soil conservation* and giving *Nainital* district a share of 20 per cent (Rs 43.35 crore) in the total budget for the project. Similarly, the C-DAP of *Nainital* district mentions the strength of the district in *sericulture* sector in terms of favourable climate for rearing all four types of *silk-worms*, production of very good quality of bivoltine silk and presence of organized *Koya* (cocoon) market in the district. The SAP responds by proposing various projects for the development of the *sericulture* sector in the State with a total cost of Rs 6.87 crore (which includes Rs 2.05 crore for *Extension work* under the *District* sector).

**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 detailed SWOT analysis conducted separately for each of agriculture & allied sectors, covering agro-climatic conditions, natural resources, infrastructure, institutions, technologies, manpower etc. The major strengths include, diverse agro-climatic conditions favourable for growing wide range of agricultural and horticultural crops (such as rice, pulses, traditional food grains, fruits, vegetables, herbal/medicinal plants and off-season vegetables), good rainfall including winter rains, good nutrient level of soils, social cohesion among farm families, cheap labour force in rural areas, use of farmyard manure in general instead of chemical fertilizers, high general literacy level, high fertile land in foot-hill areas of *Terai* and *Bhawar*, abundant forest resources (64 per cent of total area) providing useful input source for organic farming, presence of renowned *Pantnagar* Agricultural University in the State, market proximity of the State to one of the largest mandies *Azadpur* mandi located in Delhi, wide practice of backyard desi poultry, presence of milch animals in almost every household provides milk for consumption and manure for agriculture, presence of considerable aquatic resources and vast inland water resources to promote fisheries, . The weaknesses include, erratic rainfall, heavy soil erosion, occurrence of natural calamities, skewed land distribution, large scale migration of males to low income/unemployment in the hills contributing to fallow and culturable wasteland, inadequate agricultural infrastructure (such as storage and agro processing units, cold storages, roads and irrigation), low crop productivity, poor state of irrigation in hills, small & fragmented land-holdings, poor soil & water management, poor adoption of technology and collapsed extension system and low productivity of available *desi* breeds of livestock animals . The opportunities include, use of fallow and culturable wastelands in the State, rainwater harvesting in the vastly un-irrigated areas of the State having plenty of rainfall, marketing of high protein traditional food-crops like *Mandua* and *Jhangora* as health foods, institutional support to agriculture can be obtained through restructuring/rejuvenation of cooperatives, presence of very good network of NGOs/CBOs useful for supporting agricultural extension work and fertile areas in plains may be developed as grain bowl of the State, opportunity to grow high value vegetables, fruits and flower crops, potential to develop crossbred animals with other more productive *desi* breeds. The threats include, diversion of agricultural land to horticulture/cash crops leading to shortage of foodgrains, thereby affecting the food security; global climatic change, drying up of natural water resources, gradual decrease in scarce

agricultural land due to its diversion for non-agricultural purposes in the wake of increasing urbanization, depletion of forests and threat of wild animals to livestock animals.

**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?**

Though the SAP expresses its seriousness about attempting inter and intra department/programmes convergence as it gives a full section on convergence proposed in the Plan, yet it remains largely a theoretical exercise and misses in providing sufficient evidence in quantitative terms. The SAP gives a *convergence matrix* depicting list of agricultural activities that can be taken up under various ongoing central and State level schemes in the State such as *Swarna Jayanti Gram Swarozgar Yojana (SGSY)*, *Mahatma Gandhi National Rural Employment Guaranty Scheme (MGNAREGA)*, *Pradhan Mantri Gram Sadak Yojana, Hariyali (IWDP)*, *DPAP, LIPH (IFAD)*, *GRAMYA (World Bank)*, *Backward Region Grant Fund (BRGF)*, *Border Area Development Programme (BADP)* etc. The SAP describes *modes of convergence* and states that the most preferred form of convergence involves synchronizing the development schemes of different departments in such a way that they reinforce or complement each other and maximize output with aggregate minimum cost. For example, the agriculture department, the Primary Agriculture Credit Society (PACS) and the horticulture department plan to seek assistance under RKVY for their proposed programmes at *Nyayapanchayat* level that involve setting up of *Nyayapanchayat* level service centers by agriculture department, strengthening and renovating *Nyayapanchayat* level input distribution and mini-bank facilities by PACS and creation of input and collection/storage facilities at their mobile team offices by the horticulture department. The SAP states that combining the three proposals from different departments at one place in form of common facilities centers at the *Nyayapanchayats* shall reduce the aggregate cost of establishing them and prove to be more convenient to the target population in availing these facilities and services. The SAP gives another example of attempt towards convergence from the C-DAP of *Rudraprayag* district, which proposes for developing the 165 ha *Pawalia* government agriculture farm as a center of excellence due to its ideal location and enough land to accommodate a host of technology demonstration units cutting across sectoral boundaries. It is proposed to house a mini dairy unit, a biogas unit, nurseries of fruit, fodder and medicinal plants, fishery pond, manufacture and repair of agricultural implements, soil testing laboratory, backyard poultry unit, vermiculture unit, meteorological observatory etc. in the agriculture farm (*exhibiting a perfect model of integrated farming system and inter sectoral synergy in its operation and maintenance*), besides performing its main role of producing certified seeds of local crops and training of farmers. The SAP also mentions the *built in convergence* pertaining to several rural development programmes such as SGSY, MGNAREGA and *Watershed Management*; funds of these programmes can be used for promoting various activities. For example, MGNAREGA and *Watershed Management* can complement each other to a great extent as depicted in C-DAPs of *Uttarkashi* and *Rudraprayag* districts where wage cost of watershed projects is met from MGNAREGA fund so that the coverage of area under watershed management can be increased even with limited resources. The SAP comments on the *mechanism of convergence* stating that the convergence is already built-in under the RKVY guidelines and prescription for the preparation of C-DAPs. It advocates for replicating the SLSC at the district level. For ensuring greater convergence at the district and lower levels, the SAP recommends that the *District Planning and Implementation Committee (DPIC)* be strengthened with powers to reallocate district sector plan funds to enhance conformity and balance in the schemes of different departments. Besides the given section on *convergence*, the

SAP separately suggests to utilize the funds under MGNAREGS for soil and water conservation works, construction of roads and other infrastructural development. Further, the SAP proposes to work on rainwater harvesting structures using MGNAREGA funds in each *gram panchayat*. The SAP also states the summary budgets for different districts in the given section *districtwise summaries of C-DAPs*. The *summary of budget for Dehradun* district states a budget of Rs 526.06 crore (for period 2009-10 to 2011-12) for various agriculture & allied sectors, besides budgets worth Rs 20.26 crore and Rs 260.42 crore under MGNAREGS and RIDF, OCTMP & BKVY (combined) programmes, respectively that sums up the total budget to Rs 806.74 crore. The *summary of budget for Rudraprayag* district also mentions the RKVY component (Rs 19.51 crore) along with proposed budget of Rs 33.96 crore (2009-10 and 2011-12 period). Similarly, the *summary of budget for Uttarkashi* district mentions Rs 14.61 crore as the RKVY component in total proposed budget of Rs 23.79 crore. Though the SAP gives indications towards attempting convergence, yet it provides only a limited amount of information, not sufficient for commenting on the extent of convergence. The SAP gives a thrust on adopting convergence, but owing to little information on its attempts towards convergence, it is not explicit that whether all potential options for convergence have been identified and explored.

**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?**

The SAP does not provide explicit evidence to support that the experience of on-going CSS and state schemes has been studied and lessons learnt have been incorporated in SAP/C-DAPs for replication/ expansion/ modification in uncovered areas. However, it mentions the names of a number of ongoing CSS and State schemes and advocates for convergence of these schemes with RKVY with the aim of cutting costs and efficient utilization of resources.

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

The SAP is **not** explicit on estimating yield gaps and returns in different crops/livestock/fisheries. However, the SAP states that a vast gap exists between the frontline demonstration yield and farm yield for crops such as rice, wheat, maize, mandua and pulses, which is a serious cause of concern; it says that the State Plan seeks to lay thrust on productivity enhancement for major crops. It mentions about *crop productivity enhancement* programme (Rs 17.33 crore) proposed during the 11<sup>th</sup> FYP; it gives district-wise allocations under the programme for crop productivity enhancement for *maize/sugarcane/rice* crops, *cereals, pulses, oilseeds, traditional crops* and *intercropping*. Further, the SAP misses to state the yields of various crops.

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

The SAP states that most of the yield gaps can be attributed to lack of knowledge among the farmers in respect of proper techniques as well as inappropriate and insufficient availability of agri-inputs. The SAP proposes *crop productivity enhancement* programme (Rs 17.33 crore) to that end. Besides, it proposes use of techniques such as intercropping of appropriate short duration crops during the fallow season of Kharif and Rabi for soil health improvement. Further, the SAP proposes for the creation of an appropriate network of extension services to stimulate and encourage both top-down and bottom-up flows of information between farmers, extension workers and research scientists to promote the generation, adoption and evaluation of location specific farm technologies, in order to enhance the knowledge of farmers. However, it is **not** explicit on how the technological and agronomic gaps are identified to contribute to yield gaps.

**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 identifies the lack of knowledge in respect of proper techniques among farmers and inappropriate and insufficient availability of agri-inputs, as main constraints responsible for low crop productivity in general. However, it is not explicit on how the SAP adjudges the identified constraints responsible for low crop productivity. Further, the SAP misses to give *methodology*; it does not indicate about involving a bottom-up planning approach in its preparation that begins with data/information collection at the village level involving various stakeholders including farmers. Hence, it is difficult to state the basis for adjudging the identified constraints responsible for low crop productivity. Also, an empirical basis is also not evident. Therefore it is not clear whether it is an opinion or stated on the empirical basis.

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

The SAP is not explicit on how the interventions are identified to bridge the gaps in productivity levels. However, the SAP proposes a number of programmes/interventions/activities for enhancing the growth rate of various agriculture & allied sectors like agriculture, animal husbandry & dairy, horticulture and marketing/value addition/food processing (that includes the *crop productivity enhancement* programme to bridge the yield gaps of agricultural crops).

**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?**

Though the SAP attempts to state strategies for enhancing the growth rate of various agriculture & allied sectors like agriculture, animal husbandry & dairy, horticulture and marketing/value addition/food processing, yet a formal prioritization of right strategies is not explicit in the SAP. Empirical basis for strategies is not evident. Further, it is not explicit that how far they have been obtained/decided through a consultative process with all the relevant stake holders.

**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 into programmes/projects/activities by sectors and years. However, the SAP misses in general to give targets in physical terms, though it states the funding requirements for the mentioned programmes/projects. Further, year-wise allocations for the proposed programmes/projects are given only in case of *agriculture, animal husbandry, horticulture* and *fisheries* sectors; for *irrigation* and *marketing/value addition/food processing* sectors, over-all allocation is given instead of year-wise allocation. Also, year-wise allocations miss years 2007-08 and 2008-09, for all the programmes/projects under various agriculture & allied sectors. Separately, district-wise allocations are also given for some projects under *agriculture* sector. *Objectives, output* and *outcome* are not explicit in general for the proposed programmes/projects. The SAP suggests roadmap for the development of the *animal husbandry* and *fisheries* sectors. It also gives *objectives & strategy* for the *fisheries* sector. Further, the SAP does not mention sources of funding (RKVY or other sources) with respect to the

programmes/projects proposed under various agriculture & allied sectors. It is not explicit whether the viability of each project to achieve the expected output is considered.

**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. However, since soil health is a major concern particularly in hill-regions of the State where regular landslides and run-off along with deforestation have led to massive soil erosion, the SAP proposes Rs 221.99 crore for soil health improvement and soil & water conservation activities with maximum thrust for hill districts such as *Tehri* (Rs 55.71 crore), *Nainital* (Rs 43.35 crore), *Almora* (Rs 42.28 crore), *Pithoragarh* (Rs 24.08 crore), *Dehradun* (Rs 25.00 crore), and *Champawat* (Rs 12.00 crore). Further, the SAP gives special focus on the development of marginalized classes/groups like scheduled casts and scheduled tribes through programmes/projects like *Transfer of technology programme for SC/ST* (Rs 1.37 crore) and *Distribution of improved implements for SC/ST* (Rs 5.21crores) under agriculture sector and *Tribal sub plan* (Rs 0.20 crore for 2010-11) under *fisheries* sector.

**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 misses to give a consolidated figure of proposed allocations covering all the sectors; it gives proposed allocations at sector level only. To arrive at the total value of budget proposed under the Plan, we have to sum up the allocations proposed under various agriculture & allied sectors. The SAP proposes a total budget of Rs 4101.24 crore for the 11<sup>th</sup> FYP; *the figure is obtained by summing the proposed allocations for years 2009-010 to 2011-12 (that form part of the 11<sup>th</sup> FYP) encompassing agriculture, animal husbandry & dairy, horticulture and fisheries sectors (as the SAP misses to give proposed allocations for years 2007-08 and 2008-09) and aggregate figure of allocations proposed for 11<sup>th</sup> FYP in case of the irrigation and marketing/value addition/food processing sectors (for which overall allocations for the 11<sup>th</sup> FYP are given instead of the annual allocations). The SAP gives proposed annual allocations for agriculture, animal husbandry & dairy, horticulture and fisheries sectors for periods 2009-10 to 2014-15, 2009-10 to 2013-14, 2009-10 to 2012-13 and 2010-11 to 2011-12, respectively; but for irrigation and marketing/value addition/food processing sectors, the allocations are given for the entire 11<sup>th</sup> FYP and not at annual level. The aggregate amount of approved funds, covering first four years of 11<sup>th</sup> FYP, i.e. 2007-08 to 2010-11 (as given in the RKVY website), for the Uttarakhand State is Rs 125.11 crore; year-wise approved annual allocations for years 2007-08, 2008-09, 2009-10 and 2010-11 are Rs 30.54 crore, Rs 20.60 crore, Rs 71.36 crore and Rs 2.61 crore, respectively. There is a gap of the same for period 2009-10 too. Further, in case of *agriculture* sector, it gives figure of *incurred expenditure* for year 2009-10 instead of proposed allocation which we have assumed as the *proposed* allocation (for year 2009-10 for the *agriculture* sector) for our calculations. Also, the SAP misses to give year-wise allocations for *irrigation and marketing/value addition/food processing* sectors, though it gives the proposed allocation for the overall 11<sup>th</sup> FYP for these sectors. There is a huge gap of **Rs 3976.13 crore** (i.e. 96.9 per cent of the proposed budget) between the proposed*

budget for 11<sup>th</sup> FYP (Rs 4101.24 crore) and the approved budget (approved budget for first four years of 11<sup>th</sup> FYP as given in the RKVY website aggregate to Rs 125.11 crore). However, since the annual proposed allocations are not available in the SAP for *irrigation* and *marketing/value addition/food processing* sectors, we cannot compare the proposed allocations and the approved allocations on annual basis. However, the mismatch of 96.9 per cent between the total proposed budget and the aggregate approved budget is large enough to seriously affect the targets, expected outputs/outcomes/growth impact. But this needs checking.

**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, projects *Distribution of water pumps, agri. implements* (Rs 9.00 crore), *Plant Protection Programme* (Rs 6.33 crore), *Macro Management Agriculture* (Rs 87.52 crore), *Seed Village Programme* (Rs 22.05 crore), *National Programme on organic farming* (Rs 6.00 crore), *Crop Insurance Scheme* (Rs 8.64 crore), *Support to State extension programme for extension reforms* (Rs 15.60 crore), *Cattle including Buffalo Breeding* (Rs 14.10 crore), *Meat animal development* (Rs 6.99 crore), *Animal Health: Prevention of Disease and Control* (Rs 50.20 crore), *Subsidy support for livestock development* (Rs 10.02 crore), *Credit support for livestock development* (Rs 147.11 crore), *Fodder development programme* (Rs 9.00 crore) and *Development of center of excellence of silvi grass land on community land at nyayapanchayat level* (Rs 17.45 crore), *Construction and renovation of Tubewells* (Rs 185.10 crore), *Construction of Canals* (Rs 350.60 crore), *Construction and renovation of lift schemes* (Rs 39.15 crore), *Restoration of water bodies* (Rs 6.03 crore), *Construction of canal roads* (Rs 25.00 crore), *Command Area Development* (Rs 17.50 crore), *Construction of Hydrams* (Rs 25.74 crore), *Construction of Gules Hauzes, pipelines* (Rs 1778.25 crore), *Production of Improved quality Planting Material* (Rs 7.38 crore), *Strengthening of State Orchards/Gardens* (Rs 10.15 crore), *Grant to Uttarakhand Tea Development Board* (Rs 17.37 crore), *Grant to Herbal Research & Development Institute* (Rs 11.30 crore), *various activities under Bhasaj/herbal development* (Rs 7.57 crore) and *various activities under Sericulture development* (Rs 6.87 crore), infrastructure for value addition for *Terminal Markets* (Rs 180.00 crore), *Collection centers* (Rs 13.00 crore), *Central Integrated pack-houses* (Rs 16.30 crore), *Pack houses* (Rs 5.40 crore), *Specialized transport* (Rs 13.50 crore), *Ropeways* (Rs 23.25 crore), *Primary processing units* (Rs 17.20 crore), *Strengthening milk cooperatives* (Rs 34.54 crore), *Cold storages* (Rs 34.00 crore), *Multi chamber cold storage* (Rs 20.39 crore) and *Control atmosphere storage* (Rs 33.02 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*. Further, though many programmes proposed during the 11<sup>th</sup> FYP are large in magnitude yet geographic coverage is not indicated for most of them in the SAP. The large programmes/projects include, *Distribution of water pumps, agri. implements* (Rs 9.00 crore), *Plant Protection Programme* (Rs 6.33 crore), *Macro Management Agriculture* (Rs 87.52 crore), *Seed Village Programme* (Rs 22.05 crore), *National Programme on organic farming* (Rs 6.00 crore), *Crop Insurance Scheme* (Rs 8.64 crore), *Support to*

*State extension programme for extension reforms* (Rs 15.60 crore), *Cattle including Buffalo Breeding* (Rs 14.10 crore), *Meat animal development* (Rs 6.99 crore), *Animal Health: Prevention of Disease and Control* (Rs 50.20 crore), *Subsidy support for livestock development* (Rs 10.02 crore), *Credit support for livestock development* (Rs 147.11 crore), *Fodder development programme* (Rs 9.00 crore) and *Development of center of excellence of silvi grass land on community land at nyayapanchayat level* (Rs 17.45 crore), *Construction and renovation of Tubewells* (Rs 185.10 crore), *Construction of Canals* (Rs 350.60 crore), *Construction and renovation of lift schemes* (Rs 39.15 crore), *Restoration of water bodies* (Rs 6.03 crore), *Construction of canal roads* (Rs 25.00 crore), *Command Area Development* (Rs 17.50 crore), *Construction of Hydrams* (Rs 25.74 crore), *Construction of Gules Hauzes, pipelines* (Rs 1778.25 crore), *Production of Improved quality Planting Material* (Rs 7.38 crore), *Strengthening of State Orchards/Gardens* (Rs 10.15 crore), *Grant to Uttarakhand Tea Development Board* (Rs 17.37 crore), *Grant to Herbal Research & Development Institute* (Rs 11.30 crore), *various activities under Bhasaj/herbal development* (Rs 7.57 crore) and *various activities under Sericulture development* (Rs 6.87 crore), *infrastructure for value addition for Terminal Markets* (Rs 180.00 crore), *Collection centers* (Rs 13.00 crore), *Central Integrated pack-houses* (Rs 16.30 crore), *Pack houses* (Rs 5.40 crore), *Specialized transport* (Rs 13.50 crore), *Ropeways* (Rs 23.25 crore), *Primary processing units* (Rs 17.20 crore), *Strengthening milk cooperatives* (Rs 34.54 crore), *Cold storages* (Rs 34.00 crore), *Multi chamber cold storage* (Rs 20.39 crore) and *Control atmosphere storage* (Rs 33.02 crore). However, geographic distribution of proposed budget is given for some projects under *agriculture* sector. The programme/project on *Construction of water harvesting structures/soil conservation (including watershed development)* (Rs 216.78 crore) is an example of an extensive project which covers 12 out of 13 districts in the State.

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

The sectoral allocation of funds looks to be conforming to equitable and optimal distribution of resources. The SAP allocates highest share of 61.3 per cent (Rs 2513.13 crore) in the total proposed allocations to the *irrigation* sector. The *irrigation* sector deserves the allocation share provided to it. The hill-districts, that comprise 70 per cent of the *gross cropped area* of the State, have only 11 per cent of the *net sown area* as irrigated. Further, the State is drained by large number of snow fed rivers and their numerous tributaries, besides receiving adequate rainfall (1600 mms); a whopping 37.50 per cent of the average volume of rainfall received annually is estimated to flow as surface run-off in rivers apart from the water that flows due to snow melting during summer months. The State government has assessed that if only 3 per cent of the surface run-off is harvested, it can fulfill the total water requirements of the State (including irrigation). Since, geographical constraints limit the development of irrigation in the State, therefore alternative sources of irrigation like rainwater harvesting, *checkdams*, *hydrams* for lift irrigation etc. besides use of technologies like drip irrigation and sprinkler irrigation can be very useful in the development of irrigation in the State. Further, the SAP mentions that the village surveys (being conducted while preparing the C-DAPs) have revealed *irrigation* as the first priority of the farmers in all villages of hill-districts; they need irrigation to increase productivity and to switch over to off-season vegetables production that entail huge scope in the hill-region. Also, the development of *irrigation* sector is expected to have a cascading effect on the development of other agriculture & allied sectors in the State. Hence, the given high allocation share for the *irrigation* sector is quite appropriate. The SAP allocates the second highest share of 16.5 per cent (Rs 675.19 crore) to the *horticulture* sector. The allocation is quite appropriate as *horticulture* (with favourable agro-

climatic conditions) is the sunrise sector of the hill-State as it provides opportunity for diversification and increased employment in the State when scope of high rate of growth in conventional agriculture is limited due to peculiar topography and majority of scattered and marginal holdings. The SAP proposes an allocation share of 9.5 per cent (Rs 390.61 crore) for the *marketing/value addition/food processing* sector. The allocation is quite appropriate as development of modern *market-infrastructure* and other post-harvest infrastructure is crucial for the growth of agriculture & allied sectors due to inadequate agricultural infrastructure in the hill-State. The SAP proposes an allocation share of 7.7 per cent (Rs 314.74 crore) for the *animal husbandry & dairy* sector. The allocation share is quite appropriate as the State is endowed with a large population of mixed variety of livestock with low productivity, that include cattle, buffalo, goat, sheep, pig, horses, ponies, mules and poultry. Further, there is presence of milch animals in almost every household that provides milk for consumption and manure for agriculture storage. The given allocation is expected to be instrumental in tapping the latent potential of the State in *animal husbandry & dairy* sector, thereby enhancing employment and income-generating opportunities in the State, the development of which is constrained by the difficult topography. The SAP proposes an allocation share of 4.6 per cent (Rs 190.09 crore) for the *agriculture* sector. The allocation is appropriate as raising productivity levels of field-crops is necessary for maintaining the viability of the profession in the wake of increasing cost of production. However, the State is food-secure with enough food-grain production in the State. The SAP proposes an allocation share of 0.4 per cent (Rs 17.48 crore) for the *fishery* sector; *the lower share is also due to the fact that the annual allocations for the sector are given for years 2010-11 to 2013-14 and we have considered allocations pertaining to two years (2010-11 and 2011-12) belonging to the 11<sup>th</sup> FYP*. The State has fast flowing rivers and their tributaries, high and low altitude natural lakes, ponds and doggies along with the *Tehri Dam* (the largest mountain reservoir in Asia), that offer huge potential for development of *fisheries* sector in the State. Thus, we conclude that the sectoral allocation of funds conforms to equitable and optimal distribution of resources. However, as the SAP misses to give the spatial allocation of funds across districts, it is not possible to assess the spatial allocation of funds in terms of equitable and optimal distribution of resources across districts. Therefore, we cannot comment on whether spatial allocation of funds conforms to equitable and optimal distribution of resources.

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

The SAP proposes projects under *innovative schemes* for *horticulture* and *fisheries* sectors, though such schemes are not evident in projects proposed under other sectors/sub-sectors. The projects proposed under *Innovative schemes for horticulture* include, *Atal Adarsh Protected Horticulture Programme* (Rs 95 crore), *Bringing additional area under fruit cultivation under Cluster approach* (Rs 120 crore), *Fencing of orchards to prevent theft and damage to crop from wildlife and cattle* (Rs 300 crore), *Construction of Poly-lined irrigation tanks to retain rain—water for longer period* (57 crore), *Apiculture* (Rs 4.37 crore) and *Mushroom project* (Rs 5.20 crore); *budgets correspond to years 2010-11 and 2011-12 that form part of the 11<sup>th</sup> FYP*. The proposed innovative projects are expected to fulfill the special needs outside ongoing programmes in terms of protecting horticultural crops against the vagaries of nature by bringing a large area under protected horticulture, improving quality and productivity of orchards through cluster approach and utilizing half of the culturable waste land for it, preventing crops from damages caused by the wild animals, and improving irrigation status; these initiatives shall ultimately lead to promoting diversification of agriculture towards highly remunerative horticulture sector. Projects under

*Innovative schemes for fisheries include Promotion of private hatcheries @ 20 per annum (Rs 5.60 crore), Supply of pelletised fish feed at subsidized rate (Rs 5.0 crore), Setting up mini fish markets in each district @ Rs 20 lakh each (Rs 1.20 crore) and Setting up State level aquarium and water fun park (Rs 4.0 crore). These initiatives shall encourage farmers (particularly marginal farmers) to venture into the fisheries sector by tapping the available potential in the State, thereby supplementing their earnings.*

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

The SAP is not explicit on the basis of planning certain projects for the State as a whole. However, we may anticipate that these programmes/projects address certain priorities of the State agriculture department related to agriculture & allied sector which may not have been captured adequately through the projects proposed at the district-level. It is not explicit that how do they get monitored.

**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 not explicit in the SAP. In fact, for a large number of projects the SAP tends to give equal allocations across years. It is not explicit that whether it is based on expected marginal contributions. Further, any viability analysis is not explicit in the SAP.

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

The SAP misses to give allocations across years for *irrigation* and *marketing/value addition/food processing* sectors that constitute around 71 per cent (Rs 2903.73 crore) of the total proposed budget (Rs 4101.24 crore) for the 11<sup>th</sup> FYP. However, allocations across years is given for the remaining sectors forming 29 per cent of the total proposed budget under the 11<sup>th</sup> FYP and amounting to Rs 1197.51 crore. Since allocations across years miss years 2007-08 and 2008-09, we limit our analysis to the remaining three years of the 11<sup>th</sup> FYP i.e. 2009-10 to 2011-12. The SAP allocates Rs 199.63 crore (16.7 per cent), Rs 490.06 crore (40.9 per cent) and Rs 507.81 crore (42.4 per cent) for years 2009-10, 2010-11 and 2011-12, respectively. The allocation is low in the third year (2009-10) of the 11<sup>th</sup> FYP and increases in the last two years. Seeing from the perspective of the timeframe of 11<sup>th</sup> FYP (2007-08 to 2011-12), the proposed allocations do not fit the criteria of prudential allocation across years, though the allocations may be said to be correct if we consider 2009-10 as the starting year of the Plan. 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. It focuses on improving the status of irrigation in the hill-State where irrigated area form just 11 per cent of the NSA, despite the State being rich in water resources, both in terms of rainfall and rivers. Further, the State attempts to augment the vast potential existing in the State

in *horticulture* sector. It gives thrust on increasing productivity of *agriculture* and *animal husbandry & dairy* sectors; it also attempts to strengthen the *marketing/value addition/food processing* sector which is necessary to complement the efforts made in other sectors. These are expected to contribute towards country's aim of achieving 4 per cent growth rate during 11<sup>th</sup> 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.

**Directions for 12<sup>th</sup> 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 11<sup>th</sup> FYP and 12<sup>th</sup> 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 11<sup>th</sup> FYP and 12<sup>th</sup> 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.

**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 12<sup>th</sup> 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.

**(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 state clearly its target for the FYP for the agriculture sector as a whole and for the sub-sectors, giving both physical and the financial targets.
- (x) It should give *methodology* adopted in the preparation of the Plan and estimate the yield-gaps and returns.
- (xi) Allocation of funds across years should follow prudent allocation norm.

### Overall conclusion

The SAP is quite descriptive and is well attempted. It gives a systematic account of the SWOTs, covering all agriculture & allied sectors. It also attempt to suggest innovative and detailed roadmaps for the development of sectors with huge potential for growth in the hill-State that include *dairy, horticulture* and *fisheries*. However, the SAP needs to focus of various areas for improvement. Firstly, it should state clearly targets for the FYP (for both the agriculture sector as a whole and the sub-sectors) in physical terms. Secondly, It should give *methodology* adopted in the preparation of the Plan. Thirdly, it should estimate the yield-gaps and returns both at State level and at the district-level. Fourthly, the allocation of funds across years should follow prudential allocation norm. Fifthly, the SAP should give examples of attempting convergence along with sources of funding (RKVY and others) for each project to get a better picture of convergence. In other words, it should give funding details involving RKVY and other sources. Sixthly, it should attempt prioritization of interventions and strategies. Lastly, it should bring budget proposal (particular reference of irrigation sector) after discussions with the State agriculture department; the differences should not spill over to the SAP. 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 12<sup>th</sup> FYP.