

NIRD; RKVY Monitoring Unit

Analytical Report on Uttar Pradesh SAP

1. Name of the State

Uttar 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 provides a systematic account of targets decided to be achieved using RKVY assistance during 11th Five Year Plan (FYP) for the crop sector (including horticulture), the dairy sector and the fisheries sector. The target growth rates for 11th FYP are calculated by taking Tenth FYP end (i.e. 2006-07) as the base-year. The SAP targets an annual growth rate (AGR) of 8.806 per cent for the crops, dairy and fisheries sectors taken together. The annual growth rates of crops such as paddy (10.081 per cent), wheat (6.639 per cent), maize (26.286 per cent), bajra (11.320 per cent), gram (13.636 per cent), lentil (22.558 per cent), potato (7.139 per cent), vegetable (15.887 per cent) and fruits (9.694 per cent), are to be achieved by increasing their respective productivities from 1.99 to 3.00 tons/ha, 2.63 to 3.50 tons/ha, 1.3 to 3.00 tons/ha, 1.44 to 2.25 tons/ha, 0.89 to 1.50 tons/ha, 0.70 to 1.50 tons/ha, 24.32 to 33.0 tons/ha, 16.72 to 30.0 tons/ha, 10.8 to 16.0 tons/ha, respectively. The fishery sector is targeted to raise the productivity of tanks (renovated under RKVY) from 2.8 to 4.4 tons/ha, that contribute to an overall increase of 12,782 tons in fish production over the base-year production of 352,290 tons; the resultant annual growth rate being 0.725 per cent. In the dairy sector, 41,230 new improved milch animals shall be provided under RKVY having annual milk production/animal/year of 3.00 tons over the base-year production of 1.47 tons/animal/year; this will result in an additional milk production of 1.24 lakh tons over base-year production of 173.56 lakh tons at an annual growth rate of 0.33 per cent. The total proposed outlay for the SAP under RKVY is Rs 7,136.89 crores.

However, the SAP also provides targets based on the overall State Plan outlay of Rs 181,094 crores along with further investments of Rs 235,974 crores and Rs 574,932 crores through public and private sectors, respectively, under the 11th FYP. The SAP targets an annual growth rate of 10.0 per cent for the State economy as a whole; it targets annual growth rates of 6.4 per cent, 10.5 per cent and 12.4 per cent for the *Primary*, *Secondary* and *Tertiary* sectors, respectively. Among the agriculture & allied sectors, the SAP targets a growth rate (AGR) of 5.7 per cent, 10.87 per cent, 10 per cent and 13 per cent for the crop, horticulture, animal husbandry and fisheries sectors, respectively. The SAP targets to raise the annual production of rice, wheat, total cereals, pulses, total food grains, oilseeds, sugarcane, potato, milk, eggs and fish from base-year (2006-07) production-level (in thousand tones) of 11124, 25444, 39652, 1975, 41627, 1055, 159100, 12230, 18095, 948.32 (*number millions*) and 307, to eleventh Plan target (in thousand tones) of 15006, 31773, 50817, 3008, 53825, 1436, 175500, 16693, 29453, 1309.56 (*number millions*) and 532, respectively. Other important targets directly related to agriculture include, raising the cropping intensity from 154 to 160, irrigation potential creation from 32929.66 to 36934.23 thousand ha, irrigation potential utilization from 23864.36 to 25216.58 thousand ha, and installed power capacity from 9618 to 18609 MW, during the eleventh Plan vis-à-vis the base-year (2006-07).

It is to be noted that a clear-cut methodology for the preparation of SAP under RKVY is mentioned, that provides basis for the targets formulated (under RKVY); but the same is missing in case of targets formulated under overall State Plan Outlay and proposed investments through public and private sectors.

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 is not explicit on the type of method (Method 1 or Method 2) used in its preparation. The SAP does not make explicitly clear whether the State *Nodal Agency/Agriculture Department* has taken 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 (Method 1), or that it has conveyed to the districts in the first instance, the State's priorities, targets and resources that ought to be reflected in the respective district plans (Method 2). However, methodology of the SAP gives an indication of involving a combination of the two methods in its preparation. The SAP states about using bottom-up approach in formulating the C-DAPs. Primary data were collected from *Panchayats* (a sample of five *gram Panchayats* was taken from a block) and blocks on proforma specially designed for the purpose; participation of stakeholders for Participatory Rural Appraisals (PRA) was ensured. Based on consultations held with Line Department, PRA, primary data from *Panchayati Raj Institutions* (PRI) and secondary data from other sources, district profiles and vision of individual districts was prepared. A core committee of experts inferred the data and identified the constraints, gaps and potentials in the existing agricultural potential pattern of the districts. Based on the SWOT analysis, vision for each district was developed. Strategies to boost farm production and profitability of farmers for each district were worked out. All these activities, as mentioned in the SAP, indicate towards use of Method 1. The SAP then mentions about conducting brainstorming sessions on the development programmes included in draft DAPs with senior officials from State agriculture department like the Principal Secretary – Agriculture, Special Secretary – Agriculture, Chief Secretary, Agriculture Production Commissioner and officers of Line Departments as well as District Magistrates in the Planning Commission in Lucknow. Programmes both in crop sector and livestock sector were developed for obtaining holistic growth of farm sector as per the available resources of each district and its convergence with resources available from central sector schemes was assessed. The State Plan documents were consulted for deriving the desired target in farm sector in achieving the growth rate during the XIth FYP. Each programme was discussed in detail by the panel of experts before its inclusion in the District Agriculture Plan. The draft DAPs were again shown to officers of the line departments, PRIs and DMs for district-wise modification and fine tuning of District Agriculture Plans. District Planning Committees (DPC) were consulted to know if the programmes designed would satisfy the needs and aspirations of the people. The SAP further states that all programmes as per suggestions of panchayats of DPC and experts were designed in the project mode to fulfill the requirement of Stream I under RKVY. This gives indication about the involvement/guidance/direction of the State Agriculture Department in preparation of the C-DAPs, and therefore the use of Method 2 in the preparation of the SAP.

The SAP is not explicit on the methodology of integration of the C-DAPs as well as on how prioritizing major interventions has been done to prepare the SAP. However, it states that the SAP under RKVY has culminated from the C-DAPs, and that the targets and priorities of the State

Planning for the total growth and growth in farm sector are taken into account for developing the SAP. It further states that all programmes as per suggestions of panchayats of DPC and experts are designed in the project mode to fulfill the requirement of Stream I under RKVY.

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 misses to give a systematic SWOT analysis though the same is duly provided in the respective C-DAPs. However, we could discern various SWOTs of the State from the given text that may be useful in analyzing and stating the agricultural situation covering agro-climatic conditions, natural resources, infrastructure, institutions, technologies, manpower etc. The main strengths include, highest cropped area among all States (25,785 thousand hectares) with highest number of farm holdings (21 million) - *the State contributes 20 per cent (41.1 million tones) of the total national foodgrains production and is a major contributor of wheat (38 per cent), paddy (20 per cent), sugarcane (21 per cent), groundnut (34 per cent), rape-seed (17.5 per cent), fruits (8 per cent) and vegetables (16 per cent) in total agricultural production of the country*; moderately high cropping intensity of 153 per cent; accelerated pace of reclamation of the problematic area - *64.71 lakh ha area has been treated out of total problematic area of 120.44 lakh ha in the State*; the State has relatively high average foodgrain productivity (2054 kg/ha in 2005-06) vis-à-vis all India average (1715 kg/ha in 2004-05); an increasing seed replacement rate (SRR) and an encouraging seed scenario observed during tenth FYP in case of cereals, especially paddy and wheat – *SRR for paddy and wheat increased from 15.90 and 16.42 per cent in 2002-03 to 21.83 and 23.82 per cent in 2006-07*; diverse agro-climatic conditions with vast agricultural & natural resources facilitate production of horticultural crops like fruits, vegetables, medicinal and aromatic plants – *it ranks second among States with 15 per cent (266.06 lakh tones) of country's vegetable production, e.g. potato & peas (ranks one), sweet potato (ranks 2nd), cabbage (ranks sixth), overall fruits (ranks sixth)*; State Government's efforts towards checking rapid deterioration of soil health caused by various reasons including imbalanced use of chemical fertilizers is bearing fruits as the State is moving towards optimum ratio of NPK fertilizers (4:2:1) - *the NPK ratio of fertilizer used in 2001-02 was 25.2:7.6:1.0; it is estimated to narrow down to 10.71:4.40:1.0 in 2007-08*; the State has a relatively high area under irrigation (79 per cent), which is mainly irrigated through private tube-well (68.57 per cent) and canal (20.52 per cent); and the State ranks first in milk-production in the country by producing 173.56 lakh MT milk – *the State milk production has been increasing at a rate of 5.1 per cent per annum vis-à-vis national milk production of 4.5 per cent*. The main weaknesses include, the per capita income of UP is lower by 50.5 per cent than the national average (2006-07); the predominance of marginal and small farmers that account for 76.9 per cent and 14.6 per cent of the total holdings and own 61.2 per cent of the total land area – *average size of land holding is 0.83 ha and that of marginal farmers is 0.40 ha*; wide variation in agricultural productivities across various agro-eco zones, e.g. *the productivity of foodgrains is highest in Western Plain zone (30.49 quintals/ha) and lowest in Bundelkhand zone (10.51 q/ha)*; out of total created irrigation potential of 324.25 lakh ha, a large 241.84 lakh ha (75 per cent) is through minor irrigation projects vis-à-vis 82.42 lakh ha through large and medium irrigation projects, that may limit the extent of irrigation and put pressure on the underground water resources; moreover, only 64.5 per cent of the created potential is being utilized; irrigation is mainly provided through private tube-wells (68.57 per cent area) as compared to other sources including *canal* (20.52 per cent), causing stress on under-ground water resources; and

inadequate green fodder (deficit 33.80 per cent) and concentrate feed (deficit 47.66 per cent) availability. The main opportunities include, existing potential for increasing productivity substantially as stated in the SAP, in particular implementation of the SAP prepared under RKVY that has involved innovative bottom-up approach in preparation of the C-DAPs, presents high productivity-enhancement opportunities; implementation of programs like National Food Security Mission, National Horticulture Mission and now the RKVY are expected by the SAP to be instrumental in increasing farm productivity and farmer profitability; programs proposed for the reclamation of 32.02 lakh ha of reclaimable land out of remaining untreated problematic area of 55.73 lakh ha; and sanctioning 22 additional *Soil Testing Laboratories* (STL) in addition to the existing 48 STL and raising soil testing capacity from 15 lakh to 22 lakh soil samples, along with proposal to develop the facility of micronutrient analysis/testing facility in all the STL from 12 at present, is expected to accelerate the successful efforts for restoring soil health such as checking indiscriminate and imbalanced use of chemical fertilizers - *the NPK ratio of fertilizer used (in the State) is estimated to narrow down from 25.2:7.6:1.0 (in 2001-02) to 10.71:4.40:1.0 (in 2007-08)*, nearing towards the optimum ratio of NPK fertilizers (4:2:1), considered necessary for attaining maximum productivity. The threats include, substantial part of agricultural land under problematic area – *though the SAP states that out of 120.44 lakh ha of problematic area, 64.71 lakh ha has been treated, but it misses to indicate the area reclaimed as a result of treatment*; continuous decline in area irrigated by canals over the years – water use efficiency in most irrigation systems is in low range of 30-40 per cent against an ideal value of 60 per cent; groundwater (quantitatively and qualitatively) is depleting at a fast rate in many areas due to over-exploitation; some areas are affected by water logging, resulting in soil degradation due to shallow water table; excessive use of chemicals in the fields also contributes to declining water quality; and negligible pasture facilities in the State lead to shortage of green fodder.

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?

The SAP attempts for the effective convergence- inter and intra department/programmes. For example, the SAP states that the programmes on soil health improvement proposed by the C-DAPs under RKVY have been converged with the various soil health improvement programmes already implemented by the State Government, such as green manuring, dhaincha seed production, soil health card and strengthening of soil testing facilities. Further, it identifies a great scope of resources available under MGNREGA (particularly, with respect to *soil & water management* activity) to supplement the production oriented programmes proposed under RKVY with help of appropriate micro-planning. The SAP identifies availability of similar scope for convergence of RKVY with BRGF and other development programmes of *Ministry of Agriculture* and *Ministry of Rural Development*. *The SAP expects these convergences to ensure in augmenting substantial resources for stepping up the development process and help in better transparency and optimum utilization of development programmes*. The SAP further intends of converging the resources from the *Dr. Ambedkar community Tube Well scheme*, involving construction of new tube wells and improving old ones, with RKVY by providing underground fields for irrigation for increasing water use efficiency.

The SAP attempts to explore the opportunities for convergence of RKVY with central sector schemes (CSS) through a well-constructed matrix. In the given matrix, the SAP lists those RKVY programmes that are proposed to be converged with the respective central sector schemes and gives proposed budget for each programme; all programmes form part one or the other 12

different areas of farm sector that are addressed through the convergence. They are *Land, Soil Health & Fertility, Water Resources Management, Seed and Planting material, Production Technologies, Horticulture & Plantation, Technology Dissemination, Entrepreneur Development, Post Harvest and Marketing, Dairy, Fisheries, Animal Husbandry & Veterinary and Farm Mechanization*. For example, under farm sector area *Land, Soil Health & Fertility*, convergences of RKVY programmes like *Enrichment of organic carbon content using green manuring* (Rs 61.748 lakhs), *Establishment of Integrated Nutrient Management System* (Rs 116.496 lakhs) and *Soil Health Card* (Rs 136.703 lakhs) are proposed with the CSS *Strengthening of Soil health (New scheme w.e.f. 2008-09)*; convergence of RKVY programme *Recycling of Agri Waste and Crop Residues through NADEP and Vermicompost* (Rs 45.42 lakhs) with CSS *Integrated Nutrient Management (INM)*; convergence of RKVY programme *Setting-up of new soil testing laboratories* (Rs 72.52 lakhs) with CSS *Project on Balanced Use of fertilizer*; convergence of RKVY programme *Ravine Stabilization Project* with CSS *MGNREGS* (Rs 12.00 lakhs); convergence of RKVY programme *Reclamation Alkali soil* with CSS *Reclamation of Alkali & Acidic Soils (MMA)*; and convergence of RKVY programme *Reclamation of Waterlogged Area* with CSS *Command Area Development Programme*. However, the SAP misses to give the share of RKVY vis-à-vis CSS in the proposed budget for the RKVY programmes identified for convergence with the CSS.

For some programmes, the SAP also explains the convergence of various CSS with RKVY through attractive pictorial models that indicate specific components covered under respective CSS/RKVY for achieving given RKVY targets. For example, the *model for convergence of resources for improvement of productivity of pulses* exhibits convergence of CSS like *NFSM (DAC)* and *Watershed programme* with RKVY to achieve the RKVY targets of *Improvement in Productivity of Pulses in all the Districts*; respective contributions/components to be made available by *NFSM (DAC)*, *Watershed programme* and the RKVY being *Supply of Quality Seeds of Pulses, Soil & Water Management and Additional Area to Cover all the Districts*, respectively in that order.

The SAP exhibits an example of convergence of the RKVY project *Establishment of High-Tech Green Houses for Training and Demonstration of Commercial Horticulture (vegetable & floriculture) for Entrepreneur Development in Peri Urban Areas* with the CSS of *NHM*. The total estimated cost of the project of Rs 151 lakh over five-year period is proposed to be shared between *NHM* (Rs 100 lakhs) and *RKVY* (Rs 51 lakhs).

We can interpret that the SAP involves a significant extent of convergence of schemes. The SAP gives impression of its attempt to identify and explore all potential options for convergence. It identifies, funds from three types of schemes for consideration for convergence: *Sectoral and District segments of the State Plan; Central sponsored schemes, viz., MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme), BRGF (backward Region Grant Fund), SGSY (Swarn Jayanti Gram Swarajgar Yojana), Bharat Nirman, Macro Management in Agriculture (MMA), National Horticulture Mission (NHM), National Food Security Mission (NFSM) etc.; and Tied and united grants from Central and State Finance Commissions.*

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?

Though the SAP does not mention explicitly whether it has studied experience of on-going CSS and state schemes and incorporated learnt lessons in SAP/C-DAPs for replication/ expansion/ modification in uncovered areas, yet we may expect the same implicitly. The fact that the SAP

has provided a comprehensive convergence matrix showing convergence of a number of RKVY programmes with various CSS, give an implicit indication to that end.

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

The estimation of yields/yield gap analysis and returns is not explicit in the SAP. However, the SAP attempts to compare the average foodgrain productivity of the State vis-à-vis India. It also gives the productivities of major cereal crops, major pulses and oilseeds for all nine zones and the State.

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

The SAP states in its methodology portion about preparing district profiles/vision of individual districts based on consultations with line departments, participatory rural appraisal, primary data from PRI and secondary data from other sources. A core committee of experts, consisting of senior Agriculture, Horticulture and Animal husbandry experts, inferred the data and identified the constraints, gaps and potentials in the existing agricultural potential pattern of the districts. Thus, we expect the role of the expert committee in identifying the technological and agronomic gaps contributing to yield gaps. Besides this, the SAP does not make explicit that 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 does not seem to be systematic/ explicit in mentioning/identifying constraints for low crop productivity. It is not explicit in the SAP that how the constraints are adjudged responsible for low crop productivity. However, the SAP mentions about a core committee of agricultural experts that infers data collected at PRI level and identifies the constraints, gaps and potentials in the existing agricultural potential pattern of the districts. It is not explicit from the SAP that adjudging the constraints responsible for the low crop productivity 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, we may expect the roles of consultations with line departments, participatory rural appraisal, collection of primary data from PRI and secondary data from other sources, for preparing the district profiles/vision of individual districts; inferring the collected data and identifying the constraints, gaps and potentials in the existing agricultural potential pattern of the districts; and SWOT analysis, in identifying the interventions.

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?

The SAP seems to be missing in stating the appropriate strategies in a systematic manner. Also, the SAP does not provide evidence towards systematic prioritization of the strategies. Empirical basis for appropriate strategies is not explicit in the SAP. It is not explicit that how far they have been obtained/decided through a consultative process with all the relevant stake holders.

However, the SAP mentions in its methodology for preparation of DAPs about inferring the consultations with line departments, participatory rural appraisal, primary data collection from PRI and secondary data; identifying the constraints, gaps and potentials; and SWOT analysis, before working out strategies to boost farm production and profitability of farmers.

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 strategies into projects by sectors with clear cut objectives, targets, deliverables and funding for each project. However, output and outcome are not made explicit. It is not explicit whether viability of projects 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?

Yes, the problematic areas/agricultural land in the State to the tune of 120.44 lakh ha (out of which 64.71 lakh ha has been treated while remaining 55.73 lakh ha is still untreated) are attempted to be addressed through various projects under broad category *Soil Management and Land Use Project*. For example, *Enrichment of Organic Carbon Content Using Green Manuring* (Rs 6174.8 lakhs), *Establishment of Integrated Nutrient Management System (INM)* (Rs 11649.61 lakhs), *Recycling of Agri Waste and Crop Residues through NADEP and Vermicompost for Soil Nutrition and Moisture Conservation* (Rs 4542.5 lakhs), *Strengthening of Soil and Fertilizer Testing Laboratories* (Rs 7252.24 lakhs), *Soil Health Card Programme* (Rs 13670.43 lakhs) etc.

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 proposes a total budget of Rs 7,136.89 crores for projects under RKVY during the 11th FYP. However, it misses to give the annual allocations of the proposed funds under RKVY. The *Statement of Release and Unspent balance* provided by the State Government as on 30/11/2009, indicate a total receipt of funds amounting to Rs 664.83 crores under RKVY. The State receives Rs 103.90 crores, Rs 316.57 crores and Rs 244.36 crores in years 2007-08, 2008-09 and 2009-10 (as on 30/11/2009), respectively. The total amount of fund (Rs 664.83 crores) received till 30/11/2009 is just 9.32 per cent of the total proposed allocations (Rs 7,136.89 crores). Though, allocations for five-year period may not be strictly compared with fund-receipts for three years, yet it is explicit that received amount for first three years of FYP is far low in proportion vis-à-vis the total amount proposed under the FYP. The mismatch is expected to seriously affect the targets, expected outputs/outcomes/growth of projects proposed under all agricultural & allied sectors.

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 stated in the SAP are large enough, instead of being small and prolific pilot type schemes, to make a visible (impact) in the sectors. For example, *Establishment of Integrated Farmers Training Center (IFTC) at District Level* (Rs 883.31 crores), *Establishment of Agri-knowledge and Market Information Center at Block Level* (Rs 509.95 crores), *Establishment of Farm Mechanization Centers at Panchayat Level to Minimize the Energy Loss of Human Resources* (Rs 465.81 crores), *Promotion of Commercial Dairy Farming Units* (Rs 500.06 crores), *Enrichment of Organic Carbon Content Using Green Manuring* (Rs 61.75 crores), *Establishment of Integrated Nutrient Management System (INM)* (Rs 116.50 crores), *Recycling of Agri Waste and Crop Residues through NADEP and Vermicompost for Soil Nutrition and Moisture Conservation* (Rs 45.43 crores), *Strengthening of Soil and Fertilizer Testing Laboratories* (Rs 72.52 crores), *Soil Health Card Programme* (Rs 136.70 crores), etc.

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

The SAP does not mention the term Flagship programmes. However, it proposes some large programmes/projects. Examples of such large projects are *Establishment of Integrated Farmers Training Center (IFTC) at District Level* (Rs 883.31 crores), and *Establishment of Agri-knowledge and Market Information Center at Block Level* (Rs 509.95 crores), under the *Technology Dissemination* programme; *Establishment of Farm Mechanization Centers at Panchayat Level to Minimize the Energy Loss of Human Resources* (Rs 465.81 crores) under the *Farm Mechanization* programme; and *Promotion of Commercial Dairy Farming Units* (Rs 500.06 crores) under the *Dairy* programme.

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

The sectoral allocation of funds conforms to equitable and optimal distribution of resources. The SAP allocates Rs 5543.57 crore for the *Crop* sector (including *horticulture*) which is 77.7 per cent of the overall proposed allocation of Rs 7136.89 crores, under the SAP. A large allocation share for the *Crop* sector is an attempt to raise the agricultural productivity in the face of serious challenges such as deterioration of soil health due to imbalanced use of chemical fertilizers/pesticides, and depletion of water for irrigation due to over-exploitation of underground water-resources/decline in area under canal irrigation with poor water use-efficiency. To that end, the SAP proposes projects related to soil management and land use, organic farming system/certification, seed & planting material, agri-clinic at block level, farm mechanization, new laboratories, rain-fed farming, agro-forestry, micro irrigation, underground water conveyance, programmes for small and marginal farmers and women empowerment under horticulture, entrepreneur development programmes for farmers, technology dissemination, and post harvest & agriculture marketing. The projects under *Crop* sector shall be instrumental in raising agricultural productivity, improving agricultural infrastructure and encouraging diversification of agriculture, thereby enhancing farmers' income and contributing to State's target under 11th FYP for narrowing the differential of per capita income between State and the nation. The *Animal* sector, which comprises of *Animal Husbandry*, *Dairy Development*, *Poultry Development*, *Development of Goat and Piggery* and *Fisheries Development* sub-sectors, has been proposed a total allocation of Rs 1576.82 crore (22.1 per cent of the total proposed allocations under SAP). The *Dairy Development* sub-sector has been given special impetus under *Animal* sector with a proposed allocation of Rs 665.78 crores (9.3

per cent of the total proposed allocations under SAP); projects on *Promotion of Commercial Dairy Farming Units* and *Mini Milk Processing Units* have been allotted Rs 500.06 crore and Rs 85.67 crores, respectively. This is to supplement the income of small and marginal farmers and landless labourers and to tap the existing potential of milk production and distribution in the State; *the State despite being the highest milk producer, has a low per capita milk availability vis-a-vis the prosperous neighbouring States like Punjab and Haryana*. *Animal Husbandry* (except dairy, poultry, goat and piggyery) has been allocated Rs 440.04 crore (6.2 per cent). Projects like *Programme for year round production of Green Fodder to Provide Balanced Nutrition to Cattle* (Rs 35.15 crore), *Fodder Bank Development for Animal, Survival in Drought Period* (Rs 21.21 crore), and *Mineral & Vitamins Supplement to Breedable Cattle's to Check Infertility During Summer Season* (Rs 1.50 crore) shall be useful in facing the challenges of negligible pasture facilities, inadequate green fodder and concentrate feed availability in the State. Further, projects on *Strengthening of Artificial Insemination Centre* (Rs 28.14 crore) and *Improvement of Cattle (Cow and Buffalo)* are necessary for strengthening the livestock sector. *Poultry Development, Development of Goat and Piggery* and *Fisheries Development* sub-sectors have been allotted Rs 124.72 crore (1.7 per cent), 112.98 crore (1.6 per cent) and Rs 233.31 crore (3.3 per cent), respectively; this will facilitate augmentation of the income of farmers and encourage protective food production.

The spatial allocation of funds too conforms to equitable and optimal distribution of resources, though the coefficient of correlation between district populations and budget proposed for the respective districts is moderately high at + **0.34**. This is due to the fact that some districts, particularly those belonging to most backward *Bundelkhand* zone/region, are allocated more funds in proportion to their population share. For example, districts (from *Bundelkhand*) such as Jhansi, Chitrakoot, Hamirpur, Lalitpur, Mahoba and Jalaun with population shares of 1.05 per cent, 0.48 per cent, 0.63 per cent, 0.59 per cent, 0.43 per cent, and 0.88 per cent, have been proposed budget shares of 1.94 per cent, 1.42 per cent, 1.77 per cent, 1.76 per cent, 1.94 per cent and 2.54 per cent, respectively. On the other side, some relatively prosperous districts like Kanpur Nagar, Ghaziabad, Varanasi, Lucknow, Muzaffarnagar, Bareilly, Allahabad, Rai Bareilly, and Agra with high population shares of 2.49 per cent, 1.98 per cent, 1.90 per cent, 2.22 per cent, 2.13 per cent, 2.17 per cent, 2.98 per cent, 1.73 per cent, and 2.17 per cent, have been proposed lower allocation shares of 0.74 per cent, 1.09 per cent, 1.20 per cent, 1.57 per cent, 1.49 per cent, 1.53 per cent, 2.35 per cent, 1.15 per cent and 1.85 per cent, respectively.

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

The SAP does not specifically mention the *innovative projects*. However, a number of projects proposed BY SAP under RKVY are of innovative nature. For example, *Enrichment of Organic Carbon Content Using Green Manuring* (Rs 61.75 crores), *Establishment of Integrated Nutrient Management System (INM)* (Rs 116.50 crores), *Recycling of Agri Waste and Crop Residues through NADEP and Vermicompost for Soil Nutrition and Moisture Conservation* (Rs 45.43 crores), *Strengthening of Soil and Fertilizer Testing Laboratories* (Rs 72.52 crores), *Soil Health Card Programme* (Rs 136.70 crores), *Installation of Underground Pipe Line System for Water Conveyance of Irrigation Water* (Rs 126.00 crore), *Adoption and Promotion of Precision Farming Techniques through Microirrigation* (Rs 326.97 crore), *Demonstration cum Training of Ridge and Furrow System of Paddy Cultivation for Increasing Water Use Efficiency and Ecofriendly*

Cultivation (Rs 79.52 crore), Water harvesting, storage and its utilization for irrigation (Rs 122.30 crore), Watershed Management (Rs 120.26 crores), Establishment of Integrated Farmers Training Center (IFTC) at District Level (Rs 883.31 crores), Establishment of Agri-knowledge and Market Information Center at Block Level (Rs 509.95 crores), Establishment of Farm Mechanization Centers at Panchayat Level to Minimize the Energy Loss of Human Resources (Rs 465.81 crores), and Promotion of Commercial Dairy Farming Units (Rs 500.06 crores), to name a few.

These projects are expected to check the deterioration in soil-health caused by the imbalanced use of chemical-fertilizers/pesticides; improve the state of irrigation while relieving pressure on depleting underground water resources; and upgrade the modern agricultural knowledge-base of farmers, along with support for diversification to augment 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, the *Comprehensive Table of Budget Estimates of Five Year Plan (2007-12)* in the SAP (that gives district-wise budget proposed for each project by the SAP under RKVY), indicates that a large number of projects proposed by the SAP under RKVY encompass all or majority of districts. Though, budgets have been proposed in the SAP at the district level under head *Planning, Monitoring & Evaluation*, yet it is not explicit that how do the projects 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. It is not explicit whether it is based on expected marginal contributions. Any viability analysis done is also not explicit in the SAP. However, as stated in the SAP, the preparation of C-DAPs has involved consultations with line departments, participatory rural appraisal, collection of primary data from PRI and secondary data from other sources; identifying constraints, gaps and potentials by an expert group; and SWOT analysis.

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

The SAP misses to give allocations across years. Therefore, comments cannot be made on allocations across years.

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

Yes, the SAP seems to be in line/ tune with overall agricultural strategy and goals of the country/ state. The projects proposed under RKVY aim at combating the challenges faced by State agriculture in an innovative manner, and thus limiting the obstacles to high growth rate in agriculture; thereby attaining the target of a high per capita income in the State. This is also in line with the country's goal of attaining 4 per cent growth rate during the XIth five-year Plan.

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

The mechanisms for planning, baseline information collection, monitoring, documentation and regularly reporting progress are not spelt out in the SAP; though same has been involved in the preparation of the C-DAPs/SAP, as described in the SAP. However, budget worth Rs 16.50 crore is proposed in the SAP under head *Planning, Monitoring & Evaluation of DAP*.

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?**

It is not explicit in the SAP whether the planning, monitoring and evaluation mechanisms exist, functional and made use of to fulfill the expectation and bridge the gaps. However, budget worth Rs 16.50 crore is proposed in the SAP under head *Planning, Monitoring & Evaluation of DAP*. 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. Again, it is not explicit 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?**

It is not mentioned.

- 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, while enumerating projects under RKVY at the State level, must also give **year-wise** clear-cut objectives, targets, output, outcome and funding (RKVY, other sources) for each project, along with the given details of existing C.S.S. schemes, for the five-year plan period. *Though the SAP attempts to provide required information for the full FYP period (2007-12), it misses to give the same annually.* Further, the details of existing C.S.S. schemes should also contain information on the share of funds proposed to be used from the existing C.S.S. schemes vis-a-vis the RKVY funding towards meeting cost of the RKVY project, for each RKVY project. It will be useful in analyzing the extent of convergence of existing schemes with the RKVY.

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

(iii) Prioritization of strategies/interventions needs to be attempted using standard objective methods.

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

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

(vi) 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. It should facilitate mid-term evaluation by external agency and also social audit to facilitate publicity and maintenance of transparency.

(vii) The SAP should give systematic and more information on State-level target for agriculture & allied sectors / sub-sectors to be achieved using RKVY funding during the five-year Plan period, vis-à-vis the base-year values.

(viii) The SAP should provide estimates of yield-gap and return, both at State and district-level, for major crops and other enterprises.

(ix) The SAP should enumerate the methodology used in its preparation.

(x) The SAP should provide year-wise proposed budget allocations; it will be useful in analyzing the allocations across years.

Overall conclusion

The State Agriculture Department has made satisfactory attempt to prepare the SAP. It systematically provides targets set for the State under RKVY as well as those under the overall State Plan. It attempts to give clear-cut objectives, targets, deliverables and funding for each project under RKVY, for full FYP period; though it misses to give the same annually. The SAP gives detailed illustration of attempted and intended efforts towards attaining convergence of RKVY projects with the existing C.S.S.; though it misses to give share of funding by C.S.S. to meet the project cost, for each of the RKVY projects. The SAP provides budget estimates by sectors and districts for each of the project, though for the full FYP period only. However, the SAP misses to give year-wise proposed allocation of funds under RKVY. It also misses a systematic SWOT analysis and yield-gap analysis. Further, it is not providing strategies in a systematic manner. It fails to adopt a systematic prioritization of strategies and interventions. A dedicated PM&E mechanism at the State level for facilitating project screening, database management, monitoring, evaluation and reporting of RKVY projects does not seem to be in place. The 12th FYP exercise has to focus on these points.