Action Plan for implementation of Solid & Liquid Waste Management in selected Gram Panchayats of Himachal Pradesh

Background:

With more than 90% coverage of IHHL now the focus of the Total Sanitation Campaign in Himachal Pradesh is on implementing the Solid Liquid Waste Management in the rural areas of the State. As the objectives of TSC is to bring about an improvement in the general quality of life in rural areas this cannot be achieved unless the Panchayats of the State takes a next step in the direction of waste management. With these steps not only there will be an improvement in the general cleanliness of the villages but it would also see the community develop healthy habits thereby reducing their expenditure on waste related problems. Even the district specific projects of TSC also provide that up to 10% of the project cost can be utilized for meeting capital costs incurred under this component. Under this part of TSC, activities like common compost pits, low cost drainage, soakage channels/pits, reuse of waste water, system for collection, segregation and disposal of household garbage etc may be taken up.

Since for the success of any programme/campaign, a Specific, Measurable, Attainable, Realistic and Time Bound (SMART) Action Plan plays an important role at each stage/level, the Department of Rural Development intends to select few GPs which would be given a definite action plan which would be role model for others to replicate their work.

Selection criteria for the pilots under SLWM in Himachal:

The selection criteria for the models is based on the following:

- Strategic location vis a vis major rivers/water bodies/major roads,
- Religious and other types of tourism,
- Areas with large floating population, semi urban Panchayats and Industrial areas.
- Achievement of 100% ODF status.
**Proposed Action Plan for the pilots:**

For devising any action plan the concerned agencies i.e. District Administration (DWSM), Block (BLSC) and the Gram Panchayat should know as how and where to proceed. With this the implementation agencies must also identify as to quantity/ type of waste being generated, how, where and by whom the waste is being generated and what would be the suitable disposal mechanism applicable to their situation. For this each pilot under SLWM requires detailed study of the circumstances prevailing in the Gram Panchayat so that solutions suitable to its needs could be developed.
The Action Plan so formed would lays emphasis on the wholesome approach with main aim of Solid and Liquid Waste Management (SLWM) at individual level as well as at community level for which followings steps have been recommended:

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**Step 1: Establishment of a strong institutional structure:**

Since proper and well established institutional structure for implementation of solid and liquid waste management at all levels is an important requirement, such active and strong institutions would be established at each stage i.e. District, Block.
and Gram Panchayat. Nodal Officer for implementation of S&LWM shall be appointed at each level, who could preferably be some APO/PE at the DRDA level, SEBPO at the Block level and Panchayat Secretary/Sahayak at the Gram Panchayat level. The concerned DRDAs will ensure that these Nodal Officers are made responsible for overall implementation, liaising and monitoring of Campaign at their level.

- **District Water and Sanitation Mission** which is a separate cell headed by Deputy Commissioner will be responsible for conducting baseline survey for understanding the dimensions of Solid and Liquid waste generated and development of District level action-plan, Inter-sectoral Coordination with concerned Departments and in addition to this it will also:
  
  o Place staff with defined role and responsibility under Sanitation Campaign.
  o Shall carry out the training and capacity building, overall implementation, and M&E within the District.
  o Carry out awareness generation, lay down broad messages to be communicated and assist in terms of IEC support (Print & Mass Media) to districts.
  o Department of Panchayati Raj, Govt. of H.P has launched a scheme to encourage the GPs for increasing their resources for carrying out activities linked with Solid Waste management, this scheme would be implemented in all the GPs of the District especially in the pilot GPs after giving it wide publicity.
  o District Water and Sanitation Mission will also look after the task of Inter-sectoral Co-ordination among different Departments like ICDS, SJ &E Health, Education and I&PH and will converge SLWM with their departmental schemes. Likewise, the District Water and Sanitation Mission would also ask the line departments to nominate Nodal Officers from their departments for the purpose of SLWM.
The DWSM will also form an advisory committee to coordinate the actions of various Departments.

Districts with support organizations, will amend their MOUs with these SOs and incorporate SLWM in their allotted tasks. DWSM will employ these SOs in planning, preparation, implementation and monitoring of the District level action plans in general and also for the selected GPs.

The Sanitation committees at District level would meet regularly and draw up an area specific strategy and carry out its review in its meetings.

At the field level it will also supplement the efforts of the GPs, Line Departments and Support Organizations in achieving the goals of Solid Liquid Waste Management.

- **Block Level Water and Sanitation Committee** would be the main agency which will supervise the work of the Village level Sanitation Committee besides this it will also provide the field assistance to the Gram Panchayats in planning and execution of the SLWM at the field level. Block Level Water and Sanitation Committee would ensure field level convergence of resources and will supplement the efforts of the Gram Panchayat in arranging solutions for both Bio-Degradable and Non Bio-Degradable waste by liaising with Departments like Him Urja, Agriculture, Horticulture, Tourism, Urban development, Science Environment & Technology, Panchayati Raj and such other Departments. In case the Gram Panchayat requires additional funds under SLWM component, the Block Level Water and Sanitation Committee could take up matter District Water and Sanitation Mission.

- **Gram Panchayat level Sanitation committee** would be the implementation agency which with the help of the Block will execute the SLW disposal within its jurisdiction and will perform following tasks:
  - As a first step this committee will draw up an area/ ward specific strategy with focus on type/ quantity of waste generated. While drawing up the strategy it will consider the various schemes like Vermin Composting,
Biogas, recycle of animal waste & waste paper, arrangements with Kabadiwalas, land fill options / orders of the other Departments such as provisions of Panchayati Raj Act, Pollution control department, Urban Development Tourism which could be used for the waste disposal management.

- Panchayats with the help of Panchayat Secretaries, Shayaks, Health workers, AWWs, and Village Level Motivators shall consider the provision of infrastructure requirements, carryout mobilization & Hygiene education activities, with special focus on segregation of waste at the household level. For this the Panchayat will be supported by the DWSM/ BLSC for carrying out trainings at the village level.

- For ensuring the strict vigil on the defaulters, Panchayat establish vigilance committees to make SLWM a way of life. In addition to this Gram Panchayat will also assign duties to ward members/ village level Sanitation Committee members for mobilizing all the Stakeholders in the Waste management.

- Resource augmentation scheme from the Department of Panchayati Raj, Govt. of H.P for carrying out activities linked with Solid Waste management, this scheme would be adopted in the Panchayat.

- In addition to the community mobilization, trainings the Panchayat will establish a system for collection of waste form the household level. For this GPs could either impose some kind of fee or may possibly use their own resources. The work of collection of waste could be given to;
  - Community Based Organizations like MMs, YMs and SHGs which could be employed with the aim of waste disposal and income generation for these groups.
  - The Panchayat with adequate resources could do this activity itself of outsource the same to some other agency.
  - In case the Panchayat is scattered then the ward/ village wise mechanism for the collection & disposal of waste will be made.
For the disposal of waste the Panchayat will tie up with the local Kabadiwalas for recyclable waste, select land for landfill options with the help of Revenue and Forest departments for non-recyclable waste and will ensure that the Bio-degradable waste is either used in the vermin composting or is used to generate Bio-Gas including Latrine Gas by invoking the help of individual household efforts or by community participation, where large waste is generated in an limited area. For this the GPs will take the help of Block/ District level authorities for converging waste disposal mechanism with the schemes of other Departments.

In case the village population has agreed upon collective disposal of waste than the Gram Panchayat will set up separate community garbage bins with definite action plan for the waste disposal from these to its final destination.

At the GP level, the efforts of the Panchayat would be supplemented by the Support Organizations who would support the GP in achieving the goals of Solid Liquid Waste Management.

In the process of finalization of establishing the strong institutional structure for waste management Natural leaders/ Motivators would be identified at the GP level, who would be provided with training, so that they can be utilized for community mobilization and motivation.

This process should be completed by 10th October, 2010.

Step 2: Information collection:

Since management of Solid Liquid Waste would require a definite plan of action, it could be drawn only when the executing authorities at each level have information on the exact number of houses, institutions and commercial establishments for determining the type and amount of waste generated in the area. This data should be collected beforehand with respect to the following;

- No. of Households and their location.
- Total Population with the amount/type and Quantum of solid and liquid waste generated per day.
- Details about shops, marriage halls, market, commercial establishments, places where migrant labour resides and any road frequented by outsiders etc with focus on large waste generating sectors.
- Community mapping of the area.
- Attitude of the local population towards SLWM.
- Existing system and practice of waste management.
- Details of vacant spaces/land available in the local body.
- Details and activities of NGOs & CBOs, e.g. Women Self help Groups etc available in the village.

This process should be completed by 25th October, 2010.

Step 3: Social Mobilization with extensive Information Education and Communication:

As part of social mobilization, awareness campaigns would be conducted with objectives like the proper handling of waste and also bring out necessity of Waste Management for the future generation. Waste management will be projected as the resource recovery system by employing Kabbadiwalas, Composting/Vermin Composting, Bio Gas plants. Awareness campaign in this field would emphasize on the points like the ill effects of unmanaged waste to human being and the proper waste treatment technologies besides benefits that we get by using these cost effective treatment technologies. In order to encourage the people, Gram Panchayat would be required to organize awareness programmes Campaigns for segregation of wastes at the source and also promote its recycling or reuse. Awareness and the training programmes on solid & liquid waste management can be conducted out of the IEC funds of the TSC (especially made available to the concerned GP) on topics such as, safe disposal, recycle, reduce and reuse of the waste, operation and maintenance and other techniques for solid and liquid waste management through the means of:
• Inter-personal communication dealing with waste its segregation, ill effects on health, on aesthetics of the area and its income generation capacities.
• Use of various media such as Kala Jathas, posters, wall writings, songs & dramas, slogans in the local dialects and Local Press.

This process would be put in place simultaneously with the establishment of the institutional structure and also with information collection.

Step 4: Participatory planning:

After the initial Data is collected, the waste management plan would be formed by involving all the Stakeholders in the following manner;

• The data collected will be analyzed along with the representatives of the community in a Gram Sabha.
• The community will be informed about various technology options for SLWM both at household as well as community level and accordingly technology options( as referred to above) would be decided. The focus of this would be on employing the Reduce, Recycle and Reuse method of waste management.
• Based on the discussions with the community, SLWM action plan for each village, ward and whole of Gram Panchayat with performance indicators like Increase in Composting/ Vermin Composting, Bio Gas utilization, Reduction in waste water spillage, Arrangement for disposal of waste at the household level with segregation of house hold waste at the generation point, and Arrangement for collection at the community level by employing CBO’s, Panchayat staff and Kabbadiwalas.

This process should be completed by 10th November, 2010.

Step 5: Training and Capacity Building:

Since training and capacity building of different stake holders of community and members of institutional structure viz. Sanitation Committees is
essential to sensitize them and also to improve their communication skills. These could be utilized in implementation and monitoring of TSC with emphasis on Solid and Liquid Waste Management at the GP level. For ensuring purposeful training and capacity building following activities will be undertaken: -

- The GP specific training module for various categories such as, for the PRI Representatives, Village Motivators, NGOs and Social Groups like MMs/ YMs/ Devta Committees etc, Masons and the other User Group (Household members, Shopkeepers) will be used with special focus on:
  i. Awareness Generation at all the levels so that the exact message is conveyed to all the Stakeholders.
  ii. To acquaint the PRI representatives about their role and powers under the Panchayati Raj Act in maintenance of sanitary conditions in the society. In addition to this they should also be updated about any new legal or financial provision under the Panchayati Raj Act and other schemes of the Government.
  iii. To improve the process of IEC and training with stress upon the community behaviour change, will identify the triggers which could then be used for effecting the behaviour change.
  iv. To impart training to the Stakeholders with aspects related to provision for sanitary facilities, such as Soakage Pits, Composting/ Vermin-Composting, Bio-Gas plants, Washing Platforms and other sanitation & hygiene accessories required for individuals, families and the Environmental sanitation in the rural areas.

- Convergence of TSC with SGSY/ ICDS/ SSA/ MGNREGs, Self Help Groups, MMs, YMs and other schemes of the Government for various income generation activities related to waste management by providing adequate technological support, such as Composting/ Vermin Compost, Bio-Gas and other recycling options.

- Sensitization workshops for the officials of line departments.
The process of training and capacity building will be done simultaneously with the establishment of the institutional structure, information collection social mobilization, IEC and planning.

**Step 6: Technology options:**

Household and community level technological options with special reference to the situation of the habitation/ area in conjunction with approximate cost estimates as per the prevailing situation with special focus on Reduce, Reuse, Recycle, and Cost effectiveness as per aforementioned options would be worked out. To deal with the problem of Liquid Waste technological options such as leach Pit and Soakage Pits would be used. To put into place effective technology and to develop innovative ways & means to treat Solid & Liquid waste at the field level, with a focus to the local requirements, DWSM/ BLSC would be involved which will bring Local Technical / Scientific Institutes/ NGOs/ Individuals having necessary competence in to the implementation process.

The Panchayat will support the Individual stakeholders in making the technology options available to them during the implementation of the Waste Management.

**Step 7: Inter-sectoral convergence with all the Line Departments:**

As the needs of better sanitation and hygiene facilities in the selected GPs cannot be fulfilled by the lone efforts of department of Rural Development and its Agencies, there is a requirement that Waste Management be converged with other Schemes of the Government. This being a part of the establishment of the institutional structure, the first step in this direction would be required at the District level. After the District level the Block Level Sanitation Committee will take up the task of inter-sectoral convergence at the GP level wherein all the line Department with their field level agencies/ programmes would be used for the purpose of waste management. The major schemes wherein the inter-sectoral convergence could take place are :

a. Education Department schemes like, Sarva Shiksha Abhiyan (SSA) & Mid Day Meal scheme.

c. Health Department under the National Rural Health Mission.

d. Agriculture/ Horticulture Departments under the schemes for Composting/ Vermin Composting.

e. Renewable Energy Department in the shape of Biogas plants.

f. Social Justice and Empowerment Department under Integrated Child Development Scheme (ICDS).

g. Rural Development Department under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Watershed Projects, Guru Ravidas Civic amenities schemes & Swarnjayanti Gram Swarozgar Yojana (SGSY).

h. Irrigation and Public Health with Accelerated Rural Water Supply Programme (ARWSP) and Swajaldhara with focus on Rain Water Harvesting.

i. Urban Development Department with their schemes for waste management in periphery areas of towns.

j. Tourism Department with their schemes for tourism development.

k. Pollution Control Board of the Department of Science and Technology.

It will be continuous feature of the SLWM Strategy in the Gram Panchayat.

Step 8: Operation and maintenance:

Operation and Maintenance at the household and community level is the most important part of the SLWM campaign. This aspect should be discussed in detail during planning process and incorporated in the proposed planning by the stakeholders meeting. As a prelude to the SLWM campaign in the Panchayat it would start village / ward/ GP level cleanliness campaigns and put in to use vigilance committees to make SLWM a way of life.

The Gram Panchayat will adopt only those technologies which are suited to their conditions. Capital costs for asset creation (for Solid & Liquid waste management) would be borne from TSC funds, NGP/ MVSSP award money, Panchayat
grants under TSP/ BRGF/ other Developmental funds. Recurring costs for operation & maintenance to be met by the Gram Panchayat / Community / NGO / CBOs such as Yuva Mandals / Mahila Mandals by making them partners in operation and maintenance of the assets created for the waste management and by generating revenue at the GP level for enabling sustainability. The DWSM/ Block Level Sanitation Committee with the help of Panchayats will publically honour clean households in the selected GPs as an incentive measure. In addition to the above DWSM, BLSC and GP will carry out following intervention:

**Districts:**
- Determine the strategy to be followed for implementation at district level.
- Ensure convergence of Waste Management with other Government Schemes.
- Determine messages to be used for awareness generation, leaving space for those that lower levels will do on their own.
- Amount for asset creation under SLWM should be released to ODF GPs on priority basis.
- Assign the support organizations with the task of Waste management.
- Determine details of training to be imparted and the means of doing so.
- Identify Resource Persons (RPs) and Master Trainers (MTs) for training.
- Evaluate the need for and determine the delivery arrangements for material to be procured at GP level and guide efforts in this regard.
- Monitor the programme at the district level.

**Block:**
- Interdepartmental coordination at block level can be ensured by the BLSC.
- ODF GP’s representatives/ especially the selected GP representatives should be sensitized at block level about (SLWM).
- Work with Gram Panchayats and Support Organizations at the block level.
- Monitor the programme at the block level.
- Provide technological support to the beneficiaries as per the conditions prevailing within the Block.
**Gram Panchayat:**

- Gram Panchayat will take up the function as their own and deliver the services involved by involving the people in the awareness campaign and trainings.
- For large communities, community level solid waste management by means house-to-house collection and centralized method of treating the waste would be adopted. Such house to house collection could be made by Community bin collection or collection at pre-informed timings by some person from Panchayat/ CBOs/ Support Organization.
- But in case of small communities, de-centralized treatment methods which include the treatment of waste at the place of its origin will be used.
- Govt. of H.P. has banned the use of Polythene which should be vigorously pursued and the collected polythene should be handed over to the State Public Works Department through some agency in the Panchayat.
- The Gram Panchayat will also fix “GRAM SAFAI DIVAS” village sweeping day frequently for involving all the Stakeholders in SLWM.
- Identify Resource Persons in the village and active individuals and groups who would take the campaign forward.

**Step 9: Monitoring and Evaluation:**

Since proper Monitoring and Evaluation is an important step for ensuring sustainability and success of Sanitation Campaign, the DWSM/ BLSC/ Gram Panchayats will ensure the following:

**Districts:**

- Solid Liquid Waste management will be made a permanent agenda item of the Gram Sabha meetings.
- Monitoring and Evaluation together with Review of progress at various levels under the SLWM component of TSC would be made a regular feature at each District level meetings, so that the short comings are identified and remedial action taken accordingly.
• Appointed Nodal Officers for Waste Management will be asked to ensure effective implementation and monitoring of the SLWM in respective Gram Panchayat.

• The reporting format for the Monthly Monitoring which has been devised by the State will be sent to the State Headquarters on monthly basis for all the GPs of the District and especially for the pilot GPs. In addition the Districts can devise separate formats for evaluating and monitoring Waste Management.

• The regular reporting of the DWSM will also focus on the achieved ODF status and also on the SLWM activities which require inter Departmental coordination in areas which have large floating population influx

• DWSM will also monitor the required support needed by the field staff.

The monitoring reports should be used by the District Water and Sanitation Mission to carry out future planning.

Blocks:

• Blocks will be required to conduct regular meeting with field staff to assess and monitor the pace of campaign.

• Success stories of Village/GP would be given wide publicity, so that the place could be visited by the other people and such visits act as a motivating factor for the GP to maintain its status..

• As a part of the Block level monitoring Nodal officers of line departments and their functionaries would be sensitized at this level so that the GP working towards the goal of effective waste management gets all the support from all the quarters.

• Since technological support at the field level is crucial to the success of the programme the same would monitored at the Block level.

• Ban on Plastic items will be enforced with all vigor.
Gram Panchayat:

- Gram Panchayat as an implementation agency will take up the SLWM as its own and with the help of the Line Departments and other Stakeholders monitor and evaluate the progress against the set goals.
- Gram Panchayat will review the progress made by it under the SLWM in each Gram Sabha meeting and the same meeting will also assess the involvement of the people and their awareness level and trainings requirements.
- It will use its resources for reviewing Waste Management plan for the GP.
- Govt. of H.P. has banned the use of Polythene which should be vigorously pursued and the collected polythene should be handed over to the State Public Works Department.

Process for Waste Management:

In case of Solid waste the first requirement is to sort out waste into Organic, Inorganic and Other kinds of Waste with its segregation at source made compulsory.

**Solid Waste:** For the Storage of Solid Waste following facts should be given importance;

- Storage facilities shall be created and established by taking into account quantities of waste generation in a given area and the population densities. A storage facility shall be so placed that it is accessible to users.
b. Storage facilities to be set up by Panchayats authorities or any other agency shall be so designed that wastes stored are not exposed to open atmosphere and shall be aesthetically acceptable and user friendly.

c. Storage facilities or 'bins' shall have ‘easy to operate' design for handling, transfer and transportation of waste. Bins for storage of bio-degradable wastes shall be painted green, those for storage of recyclable wastes and other waste shall be painted in different colours.

d. Manual handling of wastes shall be prohibited. If unavoidable due to constraints, manual handling shall be carried out under proper precaution with due care for safety of workers.

**Liquid Waste:** Liquid waste is a waste grey water coming from the kitchen, bathroom, outlets of septic tanks, cattle sheds etc also requires to be disposed of properly, which need following important actions;

a. The best ways to dispose of the waste water is by using it for kitchen garden or making a soak pit outside the house.

b. At community level, an open drain which carries the waste water from every house to a place outside the village is best. This water can be treated and then used for agriculture.

**Organic Waste:** Such Waste can be used for:-

- Composting
- Vermin composting
- Biogas plant.

At the field level, DWSM and Block level Sanitation Committees should ensure management of Organic Solid Waste by its convergence with the Agriculture, Horticulture and Department of Renewable Energy (Him Urja)

**Inorganic Waste:** Inorganic waste at the village level could be divided into Recyclable and Non Recyclable based on its economic value and its disposal would depend on such.
- **Recyclable:** Items like aluminium beverage cans, steel food and spray cans and PET bottles, glass bottles and jars, paperboard cartons, newspapers, magazines, and corrugated fibreboard boxes and PVC are recyclable hence such Material may be collected separately from general waste by segregation at the initial stage. For ensuring recycle of such waste the GPs under the supervision of the Block level Sanitation Committee should make arrangements with the local Rag Pickers and other Business concerns which deal in the recycle of waste.

- **Non-recyclable:** Waste which do not have economic value of recovery e.g. tetra packs, carbon paper, thermo coal etc. could be better disposed in the following manner;
  - **Land Fill:** It is an option where either the waste Generation is not in great quantity or the population lives in scattered localities. While selecting a site for the land fill it should be taken into account that the selected site must be hygienic, safe approachable to the users, at a place with less chances of spread of foul odour & vermin.
  - **Incineration:** This options can be made use of where there is unavailability of space for Land Fill, has no appropriate system of waste disposal after its collection and the amount of Waste generated is more. Since combustion of waste could lead to spread of harmful gases care must be taken that such article like plastic, rubber and others which produce harmful emissions if burnt.

**Financial Arrangements:**

Following financial arrangements will be put into practice for the Total Sanitation Campaign in Himachal.

- Awareness building activity- funds flow from TSC projects, CCDU..
- Training and Capacity Building- funds flow from TSC projects, CCDU and other centrally sponsored capacity building projects supported by the State Government.
- Technology- primarily from the TSC.
- Maharishi Valmiki Sampoorn Swachta Puruskar and other promotional schemes- State Government.
- Nirmal Gram Puruskar- TSC funds.
- Besides this efforts at each level will be made so as to obtain support of all the other line Departments such as Education-SSA, Mid-day Meal; Health (NRHM); I&PH; ICDS; Panchayati Raj with Twelfth Finance Commission & Backward Regions Grant Fund); agriculture/ Horticulture; Him Urja; Departments like Tourism, Urban Development; and other schemes of the Rural Development (MGNREGS, Watershed Projects, Guru Ravidas Civic amenities schemes & SGSY) and other Developmental Schemes.

In order to ensure that the Waste Management in the Pilot GPs is initiated with all its vigor and strength the districts must endeavor to complete the aforesaid process by 31st December, 2010.

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