राविप्रोसंप NCSTC

National Council for Science and Technology Communication
Dept. of Science & Technology, Govt. of India, New Delhi

M.P. Council of Science & Technology
Govt. of M.P., Bhopal

जन जन के लिये विज्ञान

Science Centre (gwl.) Madhya Pradesh
(A Voluntary Action for Science Communication)

सत्यमेव जयते

National Children Science Congress

Theme for 2016-17

SCIENCE TECHNOLOGY AND INNOVATION FOR SUSTAINABLE DEVELOPMENT

:: OFFICE ::

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NATIONAL CHILDREN'S SCIENCE CONGRESS

How did the Children's Science Congress Begin?

The Children's Science Congress (CSC) began as an experiment in Gwalior, Madhya Pradesh in the early nineties, involving children in small scientific projects of relevance to their immediate society by Science Centre (Gwl.) M.P. It became a nationwide activity since 1993. Nationally it is organized by NCSTC-Network, a registered society comprising a network of 65 organisation Governmental & Non-Governmental working for science popularisation. The network spread over most of the states and union territories of India was facilitated in 1991 by the National Council for Science and Technology Communication (Rashtriya Vigyan Evam Prodyogiki Sanchar Parishad), Department of Science and Technology, Government of India. Science Centre (Gwl.) M.P. was its first national convener.

How is the congress organized?

The congress is organized at three levels. The district level congress is the first forum in which projects complete with one another and are screened for the state level congress. A few projects are selected from the state level for the Grand Finale, the National meet of the scientists. Seven to eight lakh child scientists participate at various levels from the states and union territories. Two - three best project from each state represent at the session of Indian Science Congress organized by Indian Science Congress Assodication, every year during January 2 - 8.

What Characterises the Science Congress Projects?

The projects-
Are innovative, simple and practical,
Represent teamwork,
Are based on exploration of everyday life situation,
Involve field based data collection,
Have definite outputs, arrived through scientific methodology,
Are related directly to community work in the local community,
Have definite follow-up plans.

Age Groups for Participation -
10 to 14 Years
14 to 17 Years
As on 31st Dec.

What are the Objective of the Congress?

The primary objectives of the Children's Science Congress is to make a forum available to children of the age-group of 10-17 years, both from formal school system as well as from out of school, to exhibit their creativity and innovativeness and more particularly their ability to solve a societal problem experienced locally scale using the method-of-science.

By implication the CSC prompts children to think of some significant societal problem, ponder over its causes and subsequently try and solve the same using he scientific process. This involves close and keen observation, raising pertinent questions, building models, predicting solutions on the basis of a model, trying out various possible alternatives and arriving at an optimum solution using experimentation, field work, research and innovative ideas. The Children's Science Congress encourages a sense of discovery. It emboldens the participants to question many aspects of our progress and development and express their findings in vernacular.

In which area should one do research?

Every year a focal theme is announced for the CSC. The children are expected to carry out projects related to the focal theme and the identified sub-themes. Activity books are available to help guide teachers

and the child scientist. A group of children not exceeding five, can do the project with the help of scientists, school science teachers, co-ordinators of school science clubs, activists of science based voluntary organization etc. The teachers/guides receive special orientation on the theme of the SCS every year.

How are the projects evaluated?

The screening is done by the evaluators at District and State Level Congresses on the basis of oral presentation, project report and aids used by the group leader while presenting the report. Innovativeness, methodology, amount of work impact of the project out come and teamwork form the basis of evaluation.

Scheme of Presentation of Project

Project Report

(1) Cover Page, (2) Second Page, (3) Abstract, (4) Contents - (a) Introduction, (b) Objectives, (c) Work Plan, (d) Methodology, (e) Results, (f) Data Analysis, (g) Conclusion, (h) Solution of the Problems, (I) Acknowledgement, (j) Reference.

Presentation of Report

1. Each Child shall be provided 8 min. for the presentation of the reports .
2. Models / Charts / power point presentation can be used for the Presentation .
3. If the study has been conducted in a group , the group leader shall represent the report .
4. Display of Models / Charts can be arranged for judgment if required .
5. Summary if the report in about 200 words should reach the district co-ordinator 15 days before the Congress.

POSTER

Guideline for Poster preparation.

Poster shall be presented on a sheet of 55cm x 70 cm (21.6" x 27.5") drawing sheets (may be different colours , or any other paper , sheets of cloth and non- conventional materials of the above size .A maximum of such four sheets can be used for presenting a project as poster. Poster for oral and poster presentation should be prepared on identical lines.

Guidelines for the preparation of project report.

1. Project report be prepared on A4 Size paper (8" x 11.5").
2. Cover page be presented in the format given in the annexure of the guideline.
3. The project report can be presented in Hindi or English language but the information will be provided in the first page should be in English together with a summary in 200 words.
4. The report can be either be typed or neatly handwritten.
5. The report be presented on one side of the paper.
6. Always keep a copy of the report with you.
7. Sketches, photographs can be used to illustrate the project.

THEME : SCIENCE TECHNOLOGY AND INNOVATION FOR SUSTAINABLE DEVELOPMENT

The focal theme has been sub divided into the following 7 sub themes :

- **Science Technology & Innovation for Natural Resource Management**
- **Science Technology & Innovation for Food and Agriculture**
- **Science Technology & Innovation for Energy**
- **Science Technology & Innovation for Health, Hygiene & Nutrition**
- **Science Technology & Innovation for Lifestyles and Livelihoods**
- **Science Technology & Innovation for Disaster Management**
- **Science Technology & Innovation for Traditional Knowledge Systems**

SUB THEME- I

I Science Technology & Innovation for **Natural Resource Management**

The sub theme will cover studies on different aspects of natural resource extraction, processing , value addition ,or any other activity that leads to optimization of natural resources uses for various purposes .It shall also cover activities related to identification of new natural resources or better uses of already available natural resources for betterment of environment and human welfare. In addition to this one can go for review/impact assessment of existing technologies for natural resources and suggest strategies to address the negative impact through appropriate correction in technology or developing alternative technologies. The work related to natural resource mapping and management planning, like watershed/micro-watershed planning, land use and land cover mapping, land use planning, water, sand and soil quality analysis and mapping, water quality management and tools and techniques for water grooves, water forests, gardens, population studies of a species and developing conservation and management planning with help from experts and authorities are some of the suggested activities. It is expected that projects are carried out with a focus beyond documentation and making inventory and lay more stress on quanlification and analysis to review the present status, significance, present and potential threats and identify innovations for sustainability.

Suggested Project Ideas :

1. Resource Mapping and Management Planning
2. Biodiversity documentation, mapping and developing management and conservation Planning
3. Study of soil quality and mapping
4. Developing a good harvesting and management plan of Non timber forest products
5. Assessing the status, usage and conservation of wild relatives of crop plants and underutilized plants and wild relatives of domesticated animals in India
6. Population counts of select groups of species and collating information on trends
7. Ecological requirements of migratory species that come to your locality from distant locations for wintering /breeding.
8. Biological corridors which are essential for movement and passage of wildlife
9. Sustainable harvest of any plant species presently being collected unsustainably
10. Observing Social behaviour studies of wildlife and their interpretation
11. Wild relatives of crop plants Landraces and varieties and their status in your area and analyzing farmers approaches to preserve them
12. Changes in flowering and fruiting patterns
13. Understanding the ecological role of lesser known flora and fauna
14. Minimizing human and wild life conflicts
15. Securing sacred groves, community conservation areas
16. A plan with the State Forest Department
17. Role of pollinators and their role in maintaining our ecosystems.
18. Role of aquatic plants and animals in maintenance of water bodies in your locality.
19. Water quality of fresh water lakes/wetland and its impact on fish
20. Ground water mapping of a locality (aquifer level identification and showing in map through iso-line preparation management plan)
21. Household water audit and management plan
22. Study the soil thickness in different terrain condition, mapping and development of land use plan
23. Study the land cover and its impact on soil quality and planning
24. Study impact of rainfall on soil erosion, mapping, identification of vulnerable location and management planning
25. Study traditional method of soil quality identification in your locality
26. Study the tilling practices and its impact on soil texture in the agricultural field
27. Study the impact of manure and fertiliser on soil organism and management planning
28. Study impact of harvesting practices of paddy and its impact on soil quality of paddy field and management planning
29. Study the impact of field bund on soil quality of agricultural field and management planning
30. Study impact of solid waste on soil quality and management planning
31. Study the impact of soil moisture on soil organisms and management planning
32. Documentation of traditional land use practices in your locality and preparation of land use plan
33. Water audit in household sector

34. Water audit in agricultural sector
35. Water audit in cottage industries
36. Water audit in schools/colleges
37. Water audit in offices
38. Water audit in hotels and restaurants, etc
39. Comparative assessment of traditional vs modern water conservation techniques
40. Study the settlement pattern (spatial arrangement) its impact on transportation cost (including energy used for transportation);
41. Study the man-made drainage pattern of locality and its association with water logging or similar problems of the locality and management planning
42. Study the impact of wildlife on the settlement area and management planning
43. Study the home garden practices in the locality and management planning
44. study on environmental impact on settlement
45. Assess diversity of flora and fauna in your home garden
46. Assess diversity of wild edibles in local market.
47. Assess status of birds in your locality and prepare a check list
48. Assess the diversity of animal domesticated in your locality
49. Assess the diversity of medicinal plant of your locality.
50. Assess the diversity rice cultivated in your locality.
51. Assess the diversity of insects in your house.
52. Assess the status of scavenging birds of your locality and their role in waste management.
53. Assess the diversity of fish of your locality
54. Assess the diversity of pulses cultivated in your locality and their status.
55. Assess the diversity of butterflies and moths of your locality.
56. Assess the status of nocturnal animals of your locality.
57. Assess the diversity of reptiles in your locality and their status.
58. Assess the diversity of life found in soil of different land categories.
59. Assess the diversity of minor forest product of your locality.
60. Assess the nesting sites of migratory birds in your locality and prepare protection action plan.

SUB THEME- II

II Science Technology & Innovation for **Food and Agriculture**

Under this sub-theme children can take up small research projects on quality, production, storage, shelf life, availability, distribution, of food for all living beings. In addition to these, projects can also be undertaken on soil quality, production practices, crop performance and yield, soil and water conservation, novel use of agricultural wastes as well as health and environmental hazards related to food and agriculture and also tools and machineries used with the main focus on application of innovative, S & T based approached aimed as sustainable modes of production systems.

Suggested Project Ideas :

1. Influence of vegetation cover on microclimate
2. Soil is a Buffer Medium
3. Land as a habitat of soil fauna
4. Evaluating filtration capacity of soil
5. Mitigate soil and water loss through runoff with suitable control measures.
6. Study of the influence of tillage on soil physical properties
7. Minimizing fluoride and nitrate toxicity in drinking water.
8. Organic farming for improving soil quality and food quality
9. Diagnosis of acid, saline and alkali soils for their better management
10. Minimizing heavy metal pollution for protecting soil quality
11. Arsenic contamination in ground water
12. Influence of management practices on land quality
13. Recycling of industrial wastes for Agricultural use
14. Soil microbial population - Key to soil health

15. Pesticide effects on land quality
16. Effect of pollutants on soil biota.
17. Eco-friendly compositing of agricultural wastes
18. Eco-friendly farming
19. Knowing water holding capacity of soil of the locality
20. Fluctuation of water tables in any season of the year of the locality/region
21. Delineation and characterization of local watershed based on topography, drainage network and local knowledge.

SUB THEME- III

III Science Technology & Innovation for **Energy**

In this sub theme, children can think about various projects like testing the efficiency of production, distribution or consumption of energy in various locations, institutions, existing devices & so on. Sustained availability of energy resources can be evaluated and futuristic predictions can be attempted though thematic or mathematic modeling. Assessment of pollution & other environmental effects can be done with a view towards sustainability.

Suggested Project Ideas :

1. Sustainability of the Energy Self-Reliance of a village / housing society
2. Equity and Distribution of energy in a locale and its effect on sustainable development.
3. Assessment of wastage of energy and energy budgeting of festivals and social functions.
4. Bio-fuels an alternative to our oil and energy needs. Children can study the availability and potential to use the biofuel as an alternative to the existing usage of fossil fuel or any other conventional fuels.
5. Village energy budget. A thorough analysis of existing village energy budget identifying the wastages and suggesting the corrections can be good project.
6. Changes in energy usages of people, Comparison of energy usage of different sections of people in the socio economic strata can be attempted.
7. Energetics of irrigation. Irrigation sector uses a very high energy. The practices of energy usages in this area can be studied in a village, identify the possibilities of energy saving and working modalities
8. Energy dynamics of dryland farming and irrigated farming. Children can think about a comparison of energy needs of dry land farming and irrigated farming in the same area.
9. Energetics of fast food culture: Energy needs of production, preservation, distribution and consumption of fast food as opposed to the traditional local foods can be compared and studied.
10 Energetics of building architecture. Every building needs energy for many aspects such as lighting, temperature maintenance and so on. There is a direct link with architecture and energy requirement. This can be compared.
11 Energetics of life stock. Different practices of lifestck maintainance requires different levels of energy. Also the life stock give back energy a balance sheet of energy requirement and return can be attempted.
12 Energy demands of cooking. Cooking involve a significant energy usage of people every where. Energy demands of different cooking styles and be studied and compared.
13 Energy comparison of different mode of transportation. Sustainability of future transportation sector lies in how we are making it more and more energy efficient. A study of energy efficiency of different modes of transportation can be worked out focussing a specific city/town or even villages.
14 Storage of energy and sustainability. We may have to store energy for various purposes as in the batteries and so on. How much this is sustainable and the usage of such storage devices can be studied in the light of sustainability.
15 Waste of energy. We can see wasteages of energy in all levels locations and contexts. Identifying the wastage of energy in different locations, pracitices etc can be taken as good study topic.
16 Effect of Energy policies on sustainability. Government takes various policies regarding energy usages such a electricity fare hike and so on. Effect of such policies on the usage pattern of energy can also be studied.
17 Using a solar module, calculate the maximum power output at different solar radiation and also try to evaluate the power output at different inclination angle of the solar module.
18 Measure the amount of gas output from different kinds of organic waste materials (cow dung, vegetable waste, food waste, municipal solid waste etc.).
19 Evaluation/estimation of energy supplied by cattle in the village ecosystem for the traction power
20 Cow dung as fuel etc and estimates the amount of other conventional energy sources required to substitute them.
21 Study the amount of fuel required to boil water/ cook a certain amount of food in different structured utensils and identify the most energy efficient one.

22 Study the components of energy systems supporting in maintaining a garden and relative roles.
23 Study the relative role of different energy systems in development of a green building.
24 Sustainability and food processing. Comparison of energy usage & energy system contributions in food processing.
25 Check the performance of chullahs in the village and rank them on the basis of performance in the light of availability and sustainability of firewood resources.
26 Sustainable energy conversion systems in a village. This need to include the energy source conversion devices, output work & kind of losses and try to rank them based on the work performance to develop a sustainable model.
27 Different refrigeration systems and their role in energy saving and management
28 Maintainance of room temperature - sustainable models. Record and analyse the room temperature inside the building with different types of roofs.
29 Charcoal production potential of different types of biomass and its role in the sustaible energy availability of a village.
30 Innovative energy efficient stoves to utilise locally available bio-residues as a source of sustainable cooking option for the village
31 Carbon sequestration through community initiatives
32 An investigation about the impact of energy availability on the change on lifestyle of the people
33 Traditional practice of backyard farming of the non-timber firewood species
34 Experimental study on conscious reduction in energy use in the household and role of awareness in the energy usage of people.

SUB THEME- IV

IV Science Technology & Innovation for **Health, Hygiene & Nutrition**

Health being at the core of this sub-theme, impact of nutrition(malnutrition, deficiency of vital elements, balanced diet), hygiene (at personal and community levels, as well as at home, school or workplace),and sanitation (cleanliness in and around us, cleanliness of water) on the health of an individual or community at large could be the local area for a project

Suggested Project Ideas :

1. Formulating nutritive food mix using locally available items
2. Personal hygiene - for not missing out on studies
3. Improving quality of potable water
4. Nutritive value of traditionally consumed food in light of standards available from NIN and/or ICMR, for optimum health
5. Nutritive value of food items consumed during period of fasting (religious / recovery from illness)
6. Alternative food stuff available in a locality and their nutritive value
7. Balanced diet
8. Highly nutritive food (proteins / carbohydrates / fats) from nearby wild / forest area
9. Metals / heavy metals in potable water and its management
10. Quality of potable water
11. Biofilteration / bioremediation processes to make available water potable
12. Hygiene at personal / familial / community level and its impact on health
13. Assessment of hygiene maintained at regular basis
14. Level of hygienic conditions during different seasons
15. Occurrence of diseases due to breakdown in hygienic conditions and its management
16. Waste management (eg., hospital waste)
17. Diseases (microbial / parasitic) and their impact of social / economical / environmental parameters
18. Impact and management of zoonotic diseases
19. Impact and management of conditions arising out of vital nutrient deficiency / malnutrition
20. Comparison of sanitation before and after Swachch Bharat campaign, in terms of behavioral change
21. Epidemics and its management
22. Development of seasonal vegetables / fruits calendar of a particular locality
23. Role of kitchen garden in providing nutritive foodstuff
24. Health condition in post disaster scenario and its management
25. Impact of non-stick cookware used on health

26. Effect of Indoor Air Pollution on health
27. Maternal health and hygiene during pre and post-partum stages
28. Gender specific health and hygiene and its control / management
29. Food consumption pattern v/s health status in tribal and rural areas.

SUB THEME- V

V Science Technology & Innovation for **Lifestyles and Livelihoods**

Children could take up projects like studying lifestyles related waste generation, its handling and management, mapping of changes in community lifestyle and livelihood of village in comparison to an urban area, study on food and energy consumption pattern in different areas, measuring carbon footprint in your own area and its comparison with the impact of hand print, analytical study on the positive and negative effect of communication technologies and social media on community and culture, mapping of case studies of sustainable livelihood systems, study and analysis on occupational mobility and migration etc. Several similar projects can be taken up by the students in relation to lifestyle and livelihood.

Suggested Project Ideas :

1. Mapping of Changes of Community Lifestyle and Livelihood in a Village
2. Lifestyle Waste Generation, Handling and Management at Household Level

Waste (Human waste, food waste, bio waste, medical waste, industrial waste) :

- ❖ Study and understand the Lifestyle waste generation, handling and management
- ❖ Understanding the impacts of human waste, food waste on city and village.
- ❖ Understanding the impacts of medical waste and industrial waste on city and rural lifestyle, its health hazards and impacts on environment.
- ❖ Mapping the innovations for waste management systems on village, city or state level.
- ❖ Conducting an analytical study of waste generation at different places and its relation with lifestyle and livelihood and designing a system for waste management on basis of the analysis.

Food (Procuring, Preparation, Storage, Consumption, Wastage) :

- ❖ Study on Food and energy consumption pattern of your village or city.
- ❖ Studying the changes in the food consumption patterns and its relation with changes in lifestyle and livelihood
- ❖ Analytical study of impact of media on food consumption adults/youth/children & its relation with health.
- ❖ Studying the occupational migration and the changes it has brought in food consumption patterns and its relation with health.

Habits related to Lifestyle & Livelihood :

- ❖ Study of relation of young children with technology & media and its effect on their lifestyle, health and education
- ❖ Observation & study on the effects of lifestyle & livelihood amongst youth in aspect of abuse like Smoking & Drinking.
- ❖ Changes in the work pattern and economy and it relation with abuse.

Lifestyle and livelihood impacting culture and community:

- ❖ Studying of natural lifestyle & organic lifestyle of a tribal community
- ❖ Comparing lifestyle of different groups / communities either in villages or cities
- ❖ Mapping of changes in community lifestyle & livelihood of a village or urban area
- ❖ Changing lifestyle of children with urbanization
- ❖ How the market force/ peer pressure has forced to change the pattern in celebration of festivals, occasions and community celebrations.
- ❖ Comparative study of the behavior of group of children growing at home and away from home
- ❖ How the traveling pattern has changed in communities and its impact (Socio-economic and political)?
- ❖ Use of social media and changing communication and interaction patterns. A behavioral study.
- ❖ Interface of formal education and livelihood
- ❖ Change in pattern of livelihood in relation with traveling
- ❖ Socialization process affecting habits in relation to peer pressure like purchasing new gadgets, toys, etc.
- ❖ Change in pattern of livelihood in relation with traveling
- ❖ Study of impact of media on cloth and consumption pattern (men's cosmetic market, cosmetic surgery, hair transplant)

Lifestyle & Livelihood diseases :

- ❖ Understanding and studying the disease due to the changes in food patterns

- ❖ Understanding and analyzing the diseases evolved due to changes in work pattern and its possible solutions

Carbon footprints and impacts of hand prints :

- ❖ Measuring Carbon footprint of your own area, either in village, town or a city
- ❖ Documenting innovative approaches for reducing carbon footprints in your area and measuring its impacts and possible suggestions for replicating it in different areas
- ❖ Measuring the carbon footprints and looking at the hand prints in your area
- ❖ Identifying the local hero's in your village, town or city and their impacts on individuals, communities or societies in relation with sustainable development
- ❖ Comparative study of joint family and nuclear family, in relation to their consumption pattern and cost analysis and carbon footprint and handprint

Sensitivity towards Environment concerning lifestyle and livelihood :

- ❖ Role of jugad on lifestyle and livelihood
- ❖ Positive and negative impacts caused on the environment due to expanding cities
- ❖ Study of effects on environment due to human migration
- ❖ Sensitivity of young children towards environmental protection, pollution and waste management
- ❖ Study of Sensitivity of industries and business towards environment

Occupations, economy and Environment:

- ❖ Application of S&T in traditional livelihood skills
- ❖ Occupational mobility
- ❖ Entrepreneurial orientation of young people
- ❖ Interface of skill training to livelihood
- ❖ Case studies on Sustainable lifestyles
- ❖ Impact of technology on lifestyle & Livelihood
- ❖ New business propositions and vocations and their impact on health, behavior and their sustainability.
- ❖ Economic and environmental of celebration of festivals in urban and rural areas.

Other combined areas of activities in relation with lifestyle and livelihood:

- ❖ Studying and analyzing change in Traveling, food, energy consumption, health issues, and migration patterns in relation to Social, Economic and Environmental context by assessing them in relation to sustainability.
- ❖ Study about the sensitivity and perception about the above the actual mentioned issues (Material and Non material) in relation to Gender, age, social / economic, demographic / geographical profile.
- ❖ Impact of media on young people and community
- ❖ Case study of lifestyle of children pear group children
- ❖ Designing of your festival / celebrations in sustainable way in relation to environment and culture conservation
- ❖ Use of social media and changing communication and interaction patterns. Do a behavioral study of humans in Villages, towns and cities.

SUB- THEME-VI

VI Science Technology & Innovation for **Disaster Management**

The sub-theme Disaster Management has been given a prominent place under the main theme. Under this sub-theme the groups of child scientists are expected to undertake small research studies about their immediate and nearby surroundings for finding potential disaster prone sites, vulnerable groups , persons with special needs and the mapping of existing resources for developing action oriented plan to manage and mitigate the consequences of disasters. As part of the project, child scientists can make use of existing knowledge of Science and Technology and use innovative approach/strategies and new management methodologies in devising and implementing action oriented strategies/plan/processes within the overall paradigm sustainable development.

Suggested Project Ideas :

1. Identification of potential disaster prone sites, locations, vulnerable target groups/population and developing a action plan by involving local community and authorities and creating awareness by organising mock exercises using locally available recourses .
2. Identification of vulnerable target groups in your area/locality specifically those are prone to a particular disaster and making/developing a response plan involving vulnerable target group and community and testing of same by periodic mock exercises.

3. Formation of Disaster Management club and taking up some activities like preparing emergency preparedness and response plan for the school involving students, Parents ,Teachers and local authorities.
   (Activities may include awareness creation, mock drill, development of education material and creation of awareness, preparing volunteers and developing opportunities for leadership.)
   (Activities may also include preparing students with basic lesson in tacking a fire outbreak, accident in a chemical laboratory, flood or even a bomb thread and terrorists attack and hostage crisis.)
   The Disaster Management club could also work on assessing the impacts of few disasters in their region and the role of media which could be played by the media.
4. Developing community/school plan to tackle disasters and emergencies by risk assessment, hazards, vulnerabilities and contingency planning to bring back life to normalcy in shortest period of time.
   (A community may be prone to various types of disaster due to factors like geological location, proximity to a chemical factory or nuclear plant etc. Accordingly a plan could be developed by involving vulnerable groups and communities.).
5. Study and developing a strategy for mitigating structural/material deficiencies prone to disaster like earthquake, fire, flood etc. through retrofitting or during on-going re-modelling in your locality, housing society and village.
6. Chemical hazard identification and risk analysis including awareness about basic information about the resources, demography, existing organizational set up, administrative facilities at the state, district and local levels. Describes preparedness and mitigation measures as well as response mechanisms.
7. Defines specific roles and responsibilities for various actors at different levels. Ensures networking/coordination with the media, NGOs, international agencies and other stakeholders.
8. Develop a disaster specific preparedness plan keeping in view the demography/topography and the disaster profile of your area.
9. Identification of hazard and risk analysis of your area by incorporating basic information about the resources, demography, existing organizational set up, administrative facilities at the state, district and local levels by developing a workable mechanism for preparedness and mitigation measures along with a response mechanisms. (Also describe and defines specific roles and responsibilities for various actors at different levels. Ensures networking/coordination with the media, NGOs, international agencies and other stakeholders)
10. Develop a plan and create awareness in high-density settlements areas and develop information centre and watchdog committees to mitigate the impact of disaster.
11. Prepare a plan to protect the livestock of your village from flood by listing the appropriate measurement that could be undertaken keeping in view the demographic, topographic profile of your area.
    (In project include mapping exercises to identify vulnerable places, resources available and safe places for taking shelter and Setting up of different Disaster Management Teams to perform specific tasks)
12. Plan to Reduce vulnerabilities and increase capacities of households and communities to withstand damaging effects of a specific disasters (Food, Earthquake, Storm, flash flood, etc)
13. Develop a Rescue plan for persons with special needs (like physically/visually disabled population and senior citizens) in relation to a particular disasters or emergencies (fire, flood, earthquake, etc) The project must have following components:-
    a. Consultation with persons with special needs for resources needed during disasters/emergencies.
    b. Identification of basic amenities (water sanitation etc.) required by them during/after the disaster takes place.
    c. Existing schemes and institutes providing assistance devices.
    d. Identification and listing of people/govt and non-govt institutes/agencies ofthe people who can provide the help to people of special needs.
    e. Preparing the inventories of items required for rescue and relief operation.
14. Study of some traditional housing earthquake resisting technologies and to what extent same has been use in modern housing construction.
15. Study some historical/old dwelling structures (Houses, hawalies etc) which had withstood the previous disaster like earthquake, floods, etc. Find out the special feature of those structures and validate the same by scientific experimentation.
16. Study the legal and Intuitional framework emerged in your area as result of new approach to tackled potential disaster. Suggest new measure to make it operationally optimum by doing a series of mock exercises.
    a. Case study can be taken with reference to a particular disaster (Natural or Manmade)
    b. Create awareness and Suggest Alternative planning/strategies and mobilizing local and state authorities for the same.

17. Study the impact of disaster on the livelihood of affected population in recent past.
18. Develop a mechanism (including mathematical modelling) to estimate the loss of livelihood or environmental degradation in a hypothetical disaster situation of your area/ region or State.
19. Estimate the economic loss by collecting primary and secondary data in relation to Environmental Degradation / loss of livelihood in your area and propose a plan to reduce the same in relation to a particular disaster (flood, cyclone, earthquake)
20. Study the local and traditional consideration, taken into consideration while constructing houses or other dwelling units or systems in relation to a particular disaster and compare it with modern method of construction.

Detailed Project Ideas :

21. Development of Hazards specific response procedure using existing local infrastructure /knowledge/capabilities, resource constraints.

Indicator of success :

How innovative resources/knowledge and capabilities has been used to develop and operationalize response procedure in term of attending medical emergencies, Emergency call system, evacuation etc. Response system can be with reference to Fire, Earthquake Terrorists Attack, Storm, Tsunami, Bomb threat, Gas leak, Hazard material release,, chemical or suspicious material spill. Children and youth could be engaged in child-participatory School Disaster Management planning inaction oriented activities in their own schools, and neighbouring communities

22. Project : School Earthquake safety & preparedness for school to prevent catastrophic consequences of earthquake.

SUB-THEME-VII

VII Science Technology & Innovation for **Traditional Knowledge Systems**

In relation to the sub-theme one can go for documentation of traditional knowledge on natural resources management, tools and techniques used for production and processing, construction, use of natural resources etc. Along with the documentation, there is a need of the collected information through appropriate assessment methods to identify the basis of the practices. One can also look into the aspects of improvisation of such practices as per contemporary requirements and also go for developing appropriate technology or management practices based on traditional practices.

Suggested Project Ideas :

1. Study of the use of herbal medicine for the treatment of dengue fever.
2. Community Knowledge about Classification of Land
3. Community knowledge on soil and water conservation
4. Scientific study of pottery based products and its potential impact on reduction of non-bio-degradable wastes.
5. Traditional methods of preservation of food items using pottery products, coolers, their economics compared to refrigerators etc.
6. Traditional granaries, pest protection practices using herbs in comparison to chemical methods of pest protection in seeds, their germination % etc.
7. Assessment, study and validation of traditional weather forecasting techniques used by tribal communities and its linkage to sustainable lifestyles.
8. Study of traditional housing in terms of climate adaptability, cultural practices, cost, life of the buildings, maintenance costs, energy efficiency etc.
9. Study of traditional food processing techniques and its comparison to new forms of modern food preservatives, carbon footprints etc.
10. Traditional crop calendars and use of indigenous seeds and cropping systems and their adaptability to pests and diseases, climate and weather extremes like flooding, drought, cyclones etc.
11. Study of sacred groves in relation to sustainability, preservation of biodiversity and eco system services.
12. Traditional water harvesting systems, their sustainability, transfer of knowledge from one generation to another etc.
13. Traditional festivals and their interconnectedness to health, energy, food, weather, agriculture, biodiversity etc.
14. Documentation, Validation of Traditional knowledge practices in your area in differentiation to superstitions/pseudoscience based practices.
15. Peoples' wisdom about utilization of wetlands for commercial purposes.
16. Farmers' indicators about good/bad soil
17. Farmers' concept on multiple cropping (intercropping, mixed cropping, paira cropping etc)
18. Community knowledge about biological indicators of soil quality.

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National Program	:	27th to 31st Dec. 2016
State Program	:	28-29-30 Nov. 2016
District Program	:	Sept. to Oct. 2016

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