

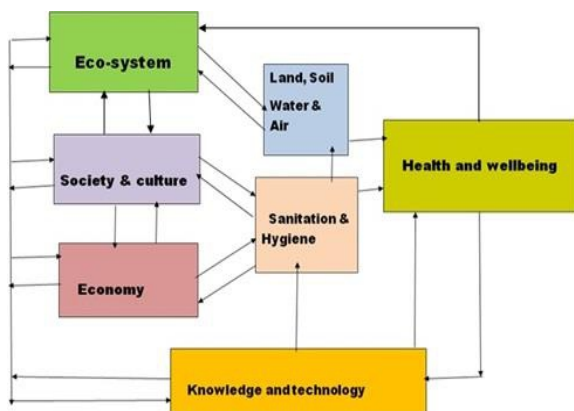
## NATIONAL CHILDREN'S SCIENCE CONGRESS (2018 & 2019)

### Focal Theme : Science, Technology & Innovation For A Clean, Green & Healthy Nation

“Science Technology and Innovation for Clean, Green and Healthy Nation” Seventy years of independence has led India's rise to world forums relating to environmental protection along with endeavor for broader goals for economic attainment. Of late, country has understood that economic success cannot be achieved in isolation of environmental concern. It is true that Indian economy continues in investing for creation of substantial capacity and capability in Science & Technology (S & T) resulting in nuclear and space programme, information and technology services, automotive and pharmaceutical industries and many more. However, all these attempts in the pursuit of GDP growth have raised the need for regulations which will ensure the reduction of environmental damage. The National Environmental Policy was adopted in 2006 as a measure for attaining sustainable development in a manner that considers ecological constraints and imperatives of social developments. The aim for sustainable development is, thus the greatest challenge to meet the need of a large and growing population, while ensuring the sustainability of biodiversity and natural resources. It is noteworthy that in the spirit of Sustainable Development Goals, India also launched its mission of Clean India (Swachh Bharat) in 2014. But, how best the nation can integrate the issues for furthering the sustainable development rests on the scientific awareness at all levels of the population. The Childrens Science Congress is such a platform, provided by the Govt. of India, where the initiation of scientific attitude starts from imbibing in the minds of the children at their prime age.

Considering all these the focal theme for 2018 and 2019 of National Children's Science Congress has been chosen as **“Science, Technology and Innovation (STI) for a Clean, Green and Healthy Nation”**. It has been designed considering operational definition and desired dimension, described in the table.

### Frame work



With clear understanding of these areas narrated so far, local and regional issues may lead one for innovative thinking and come up with new solution(s). At the same time there is a need for societal and community mobilization to develop and follow the ideal practice(s). In the contemporary world, the issues of natural resource management, sanitation for ecosystem and human health security is a global, national, as well as regional and local issue.

While considering the overall health of nation, one cannot ignore the role of society and culture and its interconnectedness to livelihoods, lifestyles and above all, sustainable progress. Clean and green sustainable progress.



Clean and green technologies and practices which have a positive impact on the ecology, economy and social health of the nation have a very important role to play. One should also find out how indigenous knowledge-based systems and practices evolved on acquired knowledge and resources locally available and how they added value for improving overall health of the society. Evaluation of such systems, its validation and re-adaptation is the key to tackle dangers of resource destruction/degradation, risks of climate change etc. besides commonly visible negative impacts from irrational use of non-renewable energy sources, and technologies having negative impacts on the ecosystems etc.

With these perspectives the following sub-themes have been chosen under the focal theme of National Children's Science Congress to promote the spirit of inquiry-based

science learning by the children based on their curricular, observational and experiential learning.

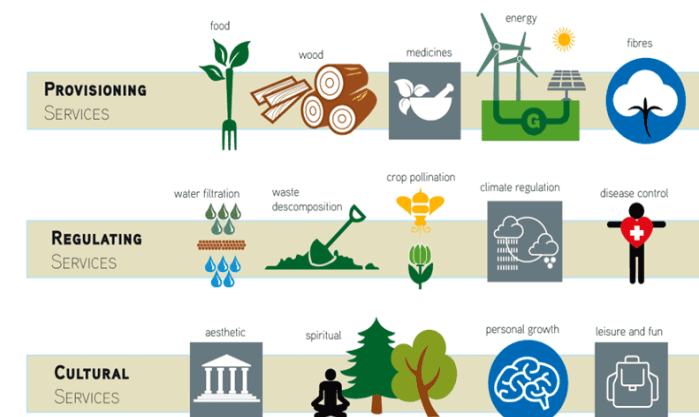
For convenience of the children, the focal theme has been divided into five sub-themes as mentioned below:

#### Sub-theme-I: Ecosystem and Ecosystem Services.

**Focus:** Understanding an ecosystem, its components, associations, functions and services.

**Coverage:** Study of ecosystems like aquatic and terrestrial, homestead garden, agricultural field, grassland; assessing biodiversity of a locality, species diversity and seasonality, habitat studies, evaluating or estimating ecological services, etc.

#### WHAT DO WE GET FROM ECOSYSTEMS?



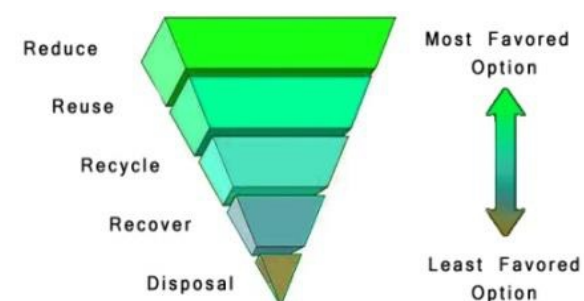
#### Sub-theme-II: Health, Hygiene and Sanitation.



**Focus:** Understanding health, hygiene and sanitation as a system associated with way of life; how to manage such issues for well being and development of living beings.

**Coverage:** Study of disease patterns, its impact, food and nutrition, studies on personal, family or community hygiene and its impact on wellbeing, Environment and health (specific with water, land, soil, forest, etc), human habitat management and health, etc.

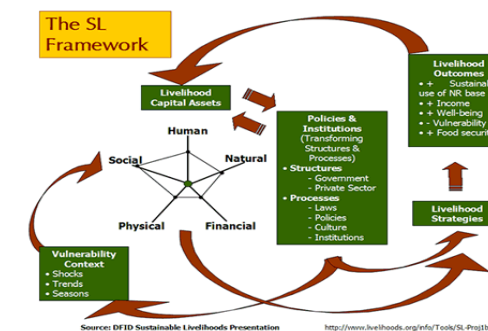
#### Sub-theme-III: Waste to Wealth



**Focus:** Reduce, Re-use, Re-cycling of waste; resource recovery from waste.

**Coverage:** Area based waste management; audit in domestic, market and institutional sector; hospital waste management, resource recovery from waste (domestic waste, agricultural waste, market waste, industrial waste, etc.), appropriate technology and management approaches for waste management and wealth recovery.

#### Sub-theme-IV: Society, Culture and Livelihoods



**Focus:** Demystification of superstitions and myths; redefining cultural value system from ecological conservation; sustainable consumption and production, sustainable livelihood perspectives in an ecological context.

**Coverage:** Study on superstitions and approach for demystification, assessing cultural practices and its impact on ecological system and services; sustainable livelihood planning and action in an ecological context; approach to promote sustainable production and consumption.

#### Sub-theme-V: Traditional Knowledge Systems (TKS)

**Focus:** Traditional Ecological Knowledge (TEK), Traditional Technological Knowledge (TTK) and Traditional Value and Ethics (TVE) for ecological security, human wellbeing and development.



#### Coverage:

Documentation and validation of traditional knowledge system specific to TEK, TTK, and TVE applied

in ecosystem management, agriculture, housing, animal husbandry, handloom and handicraft etc. Review of its potentiality for ecological security and human wellbeing; effort on developing appropriate or new technology to strengthen TKS based practices, or augmentation of ongoing practices for ecological sustainability and human welfare etc.



Table: Operational definition of key words mentioned in focal theme		
KEY ASPECTS	Broad view points	Desired dimension of outcome
SCIENCE	System of acquiring knowledge, following steps of observation, measurement, classification, comparison, analysis, interpretation, summarization, and conclusion.	Leads to –From 'Known to Unknown'; 'General to Specific'
TECHNOLOGY	The branch of knowledge that deals with the application of science, creation and use of technical means and their interrelation with life, society and environment.	Application of knowledge and understanding for practical ends.  A solution (in certain cases increase of efficiency) derived through application of knowledge by certain processes and devices. Where process stands for principle followed and device can be means to address the problem.
INNOVATION	Making desired changes in something established, especially by introducing new methods, ideas, process or products.	It may be a new process/ approach/ means/ device/ product which helps in managing and maintaining green, clean and healthy nation.
GREEN	A concept leading to environmental or eco-system sustainability	An approach/process/means to attain environmental Sustainability matching with carrying capacity of physical and human environment.
CLEAN	State of hygienic condition, free from contamination, adulteration, etc.	An approach/process/means to attain clean state linking sustainability of physical and human environment.
HEALTHY	It is the state of normal balanced situation in case of physical environment and a sound state of physical and mental condition in case of human being.	An approach/process/means to attain good health of physical environment, human environment and human being (ecosystem well being).
NATION	Nation is country with its physical environmental, social and political structure and state. It also stands for people of the country. In this context how our issues of study or solution helps in progress of the nation towards sustainable development is of prime concern.	An approach/process/means to attain national growth and development with the principle of "think globally and act locally".



abiotic and biotic attributes of ecological condition of any region/ location determines not only the state of natural resources, but also its availability, goods and services.



It is well known that the nature and extent of utilization of natural resources is responsible for degradation of ecological security. The amount of exploitation of natural resources when exceeds its carrying capacity, gives rise to ecosystem disturbances affecting its health. On the other hand, practices of sanitation are also a major responsible factor for degradation of soil and water quality resulting ecological services that is detrimental to the society. In fact, sanitation means promotion of community hygiene and disease prevention especially by keeping up sewage systems, by collecting and disposing of trash and garbage, and by cleaning streets and surroundings. Sanitation is closely linked to hygiene, which refers to conditions and practices that help to maintain health and prevent the spread of diseases. Although popularly refers to 'cleanliness', hygiene in its fullest and original meaning goes much beyond that to include all circumstances and practices, lifestyle issues, premises and commodities that give rise to a safe and healthy environment. Hygiene in home and everyday life-settings plays an important part in preventing spread of contagious/ infectious diseases. It also includes procedures used in a variety of domestic situations such as hand hygiene, respiratory hygiene, food and water hygiene, hygiene of domestic animals, etc. Improper practices pose threat to eco-system health vis-à-vis human health.

Therefore, sustainable uses and scientific management of natural resources including sanitation help in sustaining the health of eco-system and human well being as well as support the processes of development. Scientific understanding, analysis and interpretation of such issues help in developing appropriate technology for harnessing and wise uses of natural resources available in any locality.



**National Children's Science Congress (NCSC)** is a flagship programme of NCSTC, DST, Govt. of India in which children of the age group of 10-17 years (Junior 10-14, Senior: 14+-17 as on 31<sup>st</sup> December of the participating year) can participate **in groups of two (2) children each**, guided by a Guide Teacher, carrying out mini-research projects based on the method of science (2-3 months). The CSC is held at the district, state and national levels. The programme starts normally in the beginning of the academic year. For more details please contact your State Coordinating Agency or write to :

**National Programme Coordinator**  
**National Council for Science & Technology**  
**Communication, Department of Science & Technology, Technology Bhavan, New Mehrauli**  
**Road, New Delhi-110016**

Email: [sujit@nic.in](mailto:sujit@nic.in)

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### Our Global Goal for Sustainable Development



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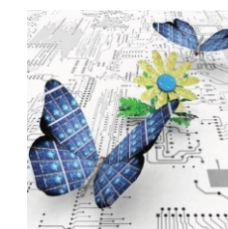
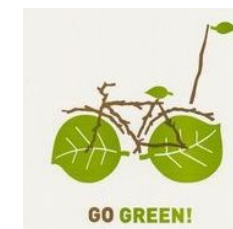
Gujarat Council on Science and Technology (GUJCOST)  
on behalf of NCSTC-DST, Govt. of India.



## 26th & 27th NATIONAL CHILDREN'S SCIENCE CONGRESS (2018 & 2019)



*A Programme of National Council for Science & Technology Communication  
Dept. of Science & Technology, Govt. of India*



### FOCAL THEME: 2018 & 2019

## SCIENCE, TECHNOLOGY & INNOVATION FOR A CLEAN, GREEN & HEALTHY NATION

### SUB THEMES

- I. ECOSYSTEM AND ECOSYSTEM SERVICES
- II. HEALTH, HYGIENE AND SANITATION
- III. WASTE TO WEALTH
- IV. SOCIETY, CULTURE AND LIVELIHOODS
- V. TRADITIONAL KNOWLEDGE SYSTEMS (TKS)

