Science Technology and Innovation Policy (STIP-2021)

GOVERNMENT OF HIMACHAL PRADESH

Science Technology and Innovation Policy (STIP)-2021

Himachal Pradesh Council for Science, Technology and Environment (HIMCOSTE), B-34, SDA Complex, Kasumpti, Shimla, Himachal Pradesh-171009

Government of Himachal Pradesh
Environment Science & Technology Department

No.STE-F (4)-1/2017 Dated: Shimla-2 the   September 2021

NOTIFICATION

The Governor of Himachal Pradesh is pleased to introduce the Science Technology & Innovation Policy (STIP-2021) for the State of Himachal Pradesh on the lines of the National Science, Technology and Innovation Policy-2020 **as per Annexure-I (page 1-24)**. The new Science, Technology, and Innovation Policy-2021 aims to bring about profound changes through short-term, medium-term, and long-term mission mode projects by building a nurtured ecosystem that promotes research and innovation on the part of both individuals and organizations.

The Science Technology & Innovation Policy (STIP-2021) shall come into force with immediate effect.

By Order

Prabodh Saxena
Addl. Chief Secretary (Env. Sci & Tech.) to the
Government of Himachal Pradesh

No.STE-F (4)-1/2017 Dated: Shimla-2 the   September 2021

Copy forwarded to the following for favour of information and necessary action:-

1. The Secretary, Department of Science & Technology, Govt. of India, Technology Bhawan, New Mahroli Road, New Delhi.
2. The Addl. Chief Secretary-cum-Pr. Secretary to the Chief Minister, H.P., Shimla-2
3. The Sr. Private Secretary to the Chief Secretary, H.P., Shimla-2
4. All Administrative Secretaries to the Govt. of H.P.
5. All Divisional Commissioners, H.P.
6. The Member Secretary, H.P. State Pollution Control Board, Shimla-9
7. The Director, Environment Science and Technology, and Member Secretary, HIMCOSTE, Shimla
8. The Director, CSIR-IHBT, Palampur Distt. Kangra
9. The Director, CPRI, Shimla
10. All the Deputy Commissioners, H.P.
11. All Heads of Departments, H.P.
12. All Autonomous Bodies, H.P./VCs, Central and State Universities.
13. The Deputy Secretary (GAD-C) to the Govt. of H.P., Shimla-2
14. Guard File

(Satpal Dhiman) 25-9-2021
Joint Secretary (Env. Science & Tech.) to the
Government of Himachal Pradesh
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1. PREAMBLE

Science, Technology and Innovation (STI) has an important role in the nation's development. India's Scientific Policy Resolution (SPR) of 1958 resolved to 'foster promote and sustain' the 'cultivation of science and scientific research in all its aspects' and the technology was expected to flow from country's established science infrastructure. The Technology Policy Statement (TPS) of 1983 emphasized the need to attain technological competence and self-reliance. As a result, Government of India brought Science and Technology Policy (STP) 2003 with the aim to bring Science and Technology (S&T) together and emphasized the need for investments in Research and Development (R&D).

Thereafter, in accordance with the UN Sustainable Development Goals (SDGs), a need was felt to synergize STI in consonance with the SDGs. Hence, the Government of India brought in place the STI Policy 2013, which was in furtherance of these pronouncements, aimed to bring fresh perspective to bear on innovations in Indian context. The STI policy has now been revised in 2020 and the new STI Policy 2020 revolves around the principles of being decentralized, evidence-informed, bottom-up, experts-driven and inclusive.

Advancements in the application of STI has raised the expectations of people in every walk of life. Over the last couple of years, the unprecedented developments in STI have greatly influenced the human civilization. India, once, known to be the fountainhead of important scientific discoveries and technological advances in the disciplines of Mathematics, Astronomy, Architecture, Chemistry, Metallurgy, Medicine, Ayurveda, Spirituality, Philosophy etc. and is now in the process of reclaiming its past glory. The disciplines of Biotechnology, Information Technology, Bio-informatics, Artificial Intelligence, Pharmaceuticals, Natural Products, Chemistry, Nano-science etc. are of great strength to the country.

The STI can exist separately on their own, in disconnected spaces, but it is their integration that leads to new value creation and hence economic order. Therefore, there is a need to create the necessary framework for enabling this integration in the identified priority areas by exploiting indigenous resources, their strength and the capacity. New structural mechanism and the models are needed to address the pressing challenges of the energy, environment, climate change, food and nutrition, water and sanitation, sustainability of habitats, affordable health care, skill building and unemployment.

Scientific research requires resources to generate knowledge and by providing solutions, innovation converts knowledge into wealth and values. Innovation has assumed center stage in the developmental goals of the nations. Paradigms of the innovation have become country and region specific. In the past, innovation has not been given due importance as an instrument of policy. Hence, STIs have emerged as major drivers of nation's development.

Consequently, it becomes imperative that the innovators and the S&T ecosystems are given due importance as these are harbinger of knowledge generation. It calls for building and strengthening capacity in the different areas such as institutional networking, human resource development, evidence-based policy and governance, public-private partnership etc. STI has the tenacity to convert 'threats' and 'challenges' into 'opportunities', thereby providing fillip to achieve the overall objectives of sustainable development.

The STI inputs assume greater significance in the hilly States like Himachal Pradesh, given the geographical constraints and challenges for development of the State. The basis of any planning for sustainable development has to be centered on human relationship with nature, sense of justice and equity within the permissibility of Himalayan specificities and adaptability of the people. However,

the need is to understand that hilly States are the natural resource reserves and rendering services as unpaid managers and custodians of natural wealth, compromising its own developmental requirements.

In view of this, the Himachal Pradesh State Innovation Council was established during 2011. It endeavors to harness the potential of newly emerging areas such as Information and Communication Technology (ICT), Geographical Information System (GIS), Artificial Intelligence (AI), Nano-Science, Biotechnology and Robotics etc. as an instrument of socio-economic change and strives to ensure that efforts in S&T percolate to the grass root so that STI becomes part of everybody's life.

2. VISION

Strengthening and promoting STI in the State by providing the environment and opportunity to the innovators and stake holders for overall sustainable development of the mountain regions and the upliftment and betterment of the society by taking technology from lab to land in an eco-friendly manner with a decentralized and bottom-up approach.

3. OBJECTIVES

As a prelude to laying down a clear-cut Science, Technology and Innovation (STI) Policy, the aims and objectives are required to be clearly defined. Considering the peculiarity of the hilly terrain, living conditions, difficult livelihood, development needs, environment conservation, the stakes for STI intervention are rather high. Hence, the following objectives have been set forth.

I.   To strengthen the Research and Development (R&D) Institutions and Innovation centers.

II. Identify priority R&D areas and provide platform for fostering scientific research and innovations for promoting sustainable development in the State.

III. Promotion and development of appropriate ecosystem for innovation and documentation of innovations in the form of reports, Intellectual Property Rights (IPRs), publications etc.

IV. To promote use of STI in identified priority areas by harnessing natural/indigenous resources and development of new mechanisms for transforming knowledge to technology business incubators and science led appropriate livelihood options.

V. To supplement and complement the national objectives of self-reliance, technological competence and the maximum use of indigenous resources for the socio-economic development.

VI. To promote sustainable development of Himalayan natural resources and to leverage Traditional Knowledge System (TKS) including 'vocal for local' philosophy.

VII. To promote an environment for the enhanced public-private participation in the R&D activities.

VIII. To popularize Science and Technology among school and college students and developing scientific temper amongst the different sections of the society.

4. CHALLENGES

I. Reorientation of academic institutions towards application of science for sustainable development and livelihoods by addressing the mountain

specificities viz. inaccessibility, fragility, marginality, diversity or heterogeneity, niche and human adaptations.

II. Integration of innovations for skill development in Research and Development (R&D) space.

5. STRATEGIES

I. Creating Ecosystem for Innovation

Mechanism is required to be evolved for fostering partnership amongst the academic/research institutions, innovators and the industry etc. Mobility of experts from academia to industry and vice-versa needs to be facilitated. Replication of success stories in Science and Technology (S&T) based innovations from the Indian experience relevant to the mountain environment. Promotion and facilitation of private investors or any individual in Research and Development (R&D) sector by way of providing incentives to the new ideas.

Action Points

a) Promoting new ideas and innovations.

b) Facilitating of filing of IPRs and development of prototypes.

c) Reorienting and facilitating R&D institutions and innovators for research and technology transfer.

d) Leveraging private partners in research and technology development.

e) Incentivizing the documentation and validation of innovations and development of new technologies by establishing State innovation foundation.

f) Acceptance of innovation by line departments for the development of new technologies.

II. STI Interventions for Self-employment and Livelihood Security

i) Self-employment for Sustainable Livelihood

The people living in remote and inaccessible areas are vulnerable to unsustainable livelihood. With agriculture and allied activities being the main occupation, these people seldom acquire continuous employment throughout the year. The farmers are required to be trained in the rural based activities such as food processing and value addition, beekeeping, poultry, goat and pig farming, fishery, sericulture, mushroom farming, cultivation of medicinal and aromatic plants, cutting and tailoring, embroidery, post-harvest management, organic products etc. It will bring additional income to the farmers particularly women farmers and provide self-employment largely throughout the year.

Action Points

a) Support for commercialization of innovations.

b) Transfer of technology to willing entrepreneurs.

c) Value addition and market linkages.

d) Promotion of contract farming.

e) Development and promotion of rural/indigenous technologies.

f) Skill development, self-employment through food processing and value addition etc. converging with the much larger programmes of Aatma Nirbhar Bharat and Skill Council of India in a more reasonable and effective manner.

ii) New Initiatives in Agro-Horti-Animal sector

The State is known for the cultivation of temperate fruits, off-season vegetables, flowers Medicinal and Aromatic Plants (MAPs), which can be

brought under the organized farming. There is an ample scope for the post-harvest management of fruits and the vegetables. The region is also suitable for natural and organic farming. Besides, rearing special breeds of animals such as goat, sheep, hilly cattle, horses etc. will also be a source of income to the farmers.

Action Points

a) For each agro-ecological zone, a suitable agriculture production system must be promoted with adoption of package of technologies that optimize the productivity and minimize the negative impacts on the environment.

b) Promoting molecular biology, genetic engineering and biotechnology which can supplement conventional breeding approach in enhancing the yield potential, income, sustainability and equity. Promoting latest innovation technology to supplement conventional breeding approach of livestock through introduction of embryo transfer technology and In Vitro Fertilization (IVF) etc.

c) Adoption of precision agriculture comprising protected cultivation, water and liquid fertilizer application through micro-irrigation, rain water harvesting, hill farm mechanization for increasing farm profitability etc.

d) To increase low external input requiring but nutritionally rich food crops which are niche area specific and traditional to the State.

e) Promotion of natural and organic farming. Development of eco-friendly technologies such as Integrated Pest Management (IPM), Integrated Nutrient Management (INM) and organic fertilizers.

f) Development of new mechanisms for transfer of technologies to entrepreneurs and start-ups by facilitating the interface between the R&D institutions and the industry.

g) Improvement and conservation of the breeds of Pashmina goat, Gaddi sheep, Spiti horses, yak, Rampur Bushairi chegu goat and Himachali pahari cow etc.

h) Mainstreaming traditional varieties and breeds of crops and animals enabling hill farmers to adapt to climate change, improved nutrition and livelihoods.

i) Enhancing productivity of livestock.

j) Adoption of the techniques for the post-harvest management and value addition of surplus agri-horticulture, livestock and fisheries produce.

k) Strengthening of indigenous diagnostics, vaccines, functional foods and cost-efficient feeds and other innovation technologies for applied aspects of veterinary and animal husbandry sector.

l) Web or internet based health monitoring platform for all animals and humans.

m) Management and handling of abundant stray cattle population.

iii) Social and Gender Equity

Sustainable efforts are required for the social upliftment and empowering the weaker sections of the society and addressing the gender bias in the rural and tribal areas.

Action Points

a) Gender equity and empowerment of women with scientific knowledge through the implementation of need-based training programmes.

b) To mitigate gender disparity in R&D funding in various S&T programmes.

iv) Industrial Productivity with Indigenous Resources

The indigenous know-how and the technologies, the application of which

holds well even in today's contemporary world are to be promoted. Besides, rural industrial sector is a source of employment to the local youth, it should be encouraged by adopting low cost appropriate technologies for the upliftment of society and sustainable livelihood. Line departments should be strengthened to identify technological gaps for improvement in agro-based rural industrial productivity.

Action Points

a) Promoting low cost technologies using domestic resource.

b) Facilitation of technology up-gradation.

c) Geographical Indications (GI) of the unique agricultural produce, handicrafts and manufactured goods of the State (GI tagging of Him gauri milk, Himachali pahari cow milk, exclusively marketed by Milkfed) and organic mutton/chevon of Gaddi sheep/goat.

d) Adoption of mechanism for marking of GI sanctioned products for the benefit of beneficiaries.

III. Infrastructure and Human Resource Development (HRD)

i) Perspective Planning for Science and Technology (S&T) Interventions

The potential scientific institutions shall be identified which could be entrusted with the responsibility of improving traditional low-cost technologies and developing new eco-friendly technologies for local applications, as importing new technologies and replicating their applications may not fall in line with the desired financial and economical time scale. Subject specific S&T groups will be constituted to provide technical policy support to the line Departments of the State Government.

Action Points

a) STI inputs for the all line departments for the sustainable development.

b) Development of STI infrastructure hub for innovators.

ii) Optimal Use of Available Infrastructure and Resources

Science and Technology is advancing at a rapid pace, resulting in redundancy of the physical infrastructure, skills and competence. Major thrust will be laid on to network the existing infrastructure, investments and intellectual strengths available with different scientific Institutions, Universities and Non-Government Organizations (NGOs). A roadmap will be developed to re-orient the useful infrastructure, scientific and technical skills so as to bring them at par with the contemporary requirement. Steps would be initiated for their optimal utilization in the critical areas of scientific interventions.

Action Points

a) Creation of State level database of all existing institutions, their infrastructure and expertise.

b) Networking of both public and private knowledge institutions for quality human resource development and R&D activities.

c) Strengthening knowledge institutions to work in the frontier areas of S&T.

d) Creation of intra and inter departmental networks of institutions engaged in supplementary activities like Animal Husbandry, Agriculture, Rural Development and Panchyati Raj (PR) departments.

e) Real time data exchange of converging activities.

iii) Building Human and Institutional Capacities in the State Specific Cutting Edge Areas

Science offers solutions for doing things better and faster with fewer materials. Climate change, population growth, pandemic diseases, pollution etc. are impacting upon the human life and the environment. The emergence of new technologies in the frontier areas such as Information and Communications Technology (ICT), Remote Sensing, Geographic Information System (GIS), Artificial Intelligence (AI), Regional Climate Modeling (RCM), Disaster management of natural disasters, Nanotechnology, Synthetic and System Biology, Metagenomics etc. may offer potential solutions to the emerging issues and problems. Hence, the competence in the new areas of science shall be enhanced to keep pace with the global developments. Besides, it will also provide the much-needed quality human resource in the field of science and technology.

<u>**Action Points**</u>

a) R&D and academic institutions may focus in new and emerging sciences.

b) Establishment of knowledge cells, incubation, IPRs and entrepreneurship skill centers.

c) Developing State Natural Resources Data Centre (NRDC) and its linkage with the National Data Centres (NDC).

d) Establishing good linkages with S&T institutions.

e) Setting up of incubation center in nodal institutes with infrastructure development.

iv) Strengthening Scientific Temper

The students are required to be roped in during their early career to take up science as their career. The requirement of scientific input in planning process

needs to be understood in right perspective rather than distinguishing the same as a separate entity. In fact, the scientific and technological knowledge is required to be pooled in every sphere of life. The brilliant scientists and technologists, therefore, are required to be respected, regarded and roped in the process of planning and policy formulation. It shall be endeavored to constitute a committee to evaluate the work of scientists and technologists working in various fields and honor the outstanding performers.

Action Points

a) Strengthening of State Science, Technology and Innovation Council.
b) Incentives to the innovators for innovative projects and the startups.
c) Establishment of Himachal Academy of Sciences for deliberation on important issues and provide policy support to the Government.
d) Organizing the State Science Congress at different levels.

IV. Sustainable Management of Research and Development (R&D) on Natural Resources

i) Environment Protection

The policy aims at promoting Science, Technology and Innovation (STI) input for environment protection in development projects such as hydro, transport, tourism, industry, agri-horticulture, cement, housing and processing plants etc. The unscientific mining, muck dumping, use of hazardous chemicals, road congestions, dust and air pollution, leaching of toxic wastes are some of the critical areas which need immediate remedy.

Action Points

a) R&D to promote clean technologies for waste management and pollution

mitigation.

b) Focused studies on improving the quality of environment.

c) Promoting interdisciplinary research in natural resource management.

ii) Biodiversity and Ecosystem Services

Biodiversity provides immense ecosystem, goods and services for the burgeoning population. The Himalayan biodiversity can provide solution to the challenges in agriculture, health and climate change. There is a need to link biodiversity science to the people's economic prosperity. Similarly, soil erosion and the land degradation in the mountain areas is a cause of serious concern. Air pollution may also result in deteriorating health and spreading epidemics. Therefore, there is an immediate need to evolve a new paradigm to restore the balance between the economic interest and the ecological imperatives.

Action Points

a) Documentation and conservation of biodiversity.

b) Determining the direct and indirect drivers of biodiversity and ecosystem loss and future dynamics.

c) Development of Long-Term Ecological Monitoring (LTEM) tools.

d) Development of tools and techniques for the management of invasive alien species.

e) Facilitating Bioprospecting and Intellectual Property Rights (IPRs).

f) Implementation of effective water resources management plans to conserve water.

g) Adequate soil management in soil erosion areas.

h) Proper water management plans for humans, animals and cultivated crops/fruits and encouraging R&D activities.

i) Landscape engineering, where inadequacy of appropriate technological knowhow to facilitate the resource use to establish physical infrastructure and sustain the desired lifestyle of hill people, also needs special attention. The present knowledge systems are neither eco-friendly nor render security to life.

j) Documentation of fish diversity and their diseases through scientific interventions in natural habitat and to study the impact of climate change on their habitat.

iii) Disaster Management and Forecasting

The State is prone to seismic disturbances, flashfloods, cloudbursts and accidents. STI has a pivotal role to play in strategy formulation for mitigation and management of impacts of natural hazards. A comprehensive plan to enhance predictive capabilities and preparedness for meeting emergencies arising from floods, earthquakes, droughts, landslides, cloud bursts, avalanches and forest fires needs to be drawn up.

<u>Action Points</u>

a) Development of low-cost forecasting/early warning real-time system for environment monitoring (landslides, cloudbursts/flashfloods, forest fire, snow avalanche, GLOFs, road accidents etc.) with implementation and dissemination of architecture infrastructure.

b) Building capacities of stakeholders on new technologies.

c) Promotion of traditional earthquake resistant construction techniques.

d) Knowledge networking.

e) Generation of base line data of diseases, their management and forecasting.

f) Strengthening of centre for training human resources (Vests, paravets, paramilitary forces, NDRF personnel) to deal with livestock during calamities.

g) Third party disaster management audit including anthropogenic, chemical and biological hazards.

iv) Climate Change and Mitigation

The socio-economic life of the people of mountain and hilly regions, by and large, is anchored in agriculture and allied sectors. Notwithstanding this, impact of global warming has made agriculture practices vulnerable to climatic changes. There is an apparent need to study the shifting cropping patterns conducive to climatic conditions and the regular monitoring of climate change so as to make purposeful forecasting with regard to agriculture and the allied sectors, hydro-power generation, ecology and biodiversity and glaciers and water resources as well as air quality determination and meteorological hazards.

Action Points

a) Strengthening cryospheric studies for mitigation in Himachal Himalaya.
b) Support R&D efforts aiming at mitigation and adaptation of various sectors to climate change.
c) Initializing studies on the implications of climate change.

V. Clean and Green Technologies

Lack of access to clean and safe energy takes a heavy toll on human health and time, particularly that of women, children and environment. This also impedes development and entrenches poverty. Nowhere are energy poverty and its consequences as precarious as in the remote rural mountain areas of the State where mountain communities are finding it increasingly difficult to meet their

energy needs in a sustainable manner.

i) New and Renewal Energy and Energy Conservation

The new and the renewal energy help to mitigate the effect of climate change and the environmental issues. The State is endowed with abundant hydro and solar energy potential and would continue strive to promote the use of new and the non-conventional energy sources. It will help in the sustaining the energy demand of the future generations.

Action Points

a) Promotion of cost-effective technologies for promotion of harnessing renewable energy.

b) Development of new materials for photovoltaic cells and hydrogen generation.

c) Adoption/promotion of latest technology with respect to energy storage.

ii) Green Chemistry

Green chemistry reduces or eliminates the use or generation of hazardous substances. Green chemistry is also known as sustainable chemistry. It applies across the life cycle of a chemical product, including its design, manufacture, use and ultimate disposal. It reduces pollution at its source by minimizing or eliminating the hazards of chemical feed stocks, reagents, solvents and products.

Action Points

a) Encourage the development of technologies to reduce hazardous substances, pollutants, or contaminants entering any waste stream or otherwise released into the environment without proper recycling, treatment or disposal.

iii) Green Financing

Green finance plays a pivotal role in achieving inclusive, resilient and cleaner economic growth by creating environmental benefits. It helps in increasing the flow of finance from the public, private and non-profit sectors to sustainable development priorities. Considering the alarming increase in pollution level in the State and the Country, it becomes imperative to tap the untapped potential of green finance to finance green projects or investments.

Action Points

a) Incentivizing green technologies in different sectors.
b) Promotion of circular economy.

VI. Delivery System for Science and Technology (S&T) Output

i) Information and Communication Technology (ICT)

Diffusion of scientific outputs and technology interventions into social systems is a multilayered process. Except for the mission oriented strategic sectors, the delivery mechanism involves a large number of intermediaries both from the public and private sectors. This requires strengthening of linkage between the scientific and socio-economic sectors and policy interventions. Information and Communications Technology (ICT) is one of the economic development pillars as it can be used as a learning and education media.

Action Points

a) Creation of a network of agencies for delivery and effective dissemination of new technologies.
b) Creation of nodes at bottom level for effective dissemination and transfer of technology.

6. INSTITUTIONALIZATION OF STRATEGIES AND THE ACTION POINTS WITH THE LINE DEPARTMENTS OF THE STATE GOVERNMENT/CENTRAL GOVERNMENT/CIVIL SOCIETIES

The strategies/action points are to be implemented through the respective line departments of the State Government. In fact, these are required to be declare their priority areas. The concerned departments may already be executing some of these action points. However, the other action points are required to be implemented in a phased manner and the required budgetary provision needs to be earmarked for this purpose by the stakeholder departments. The integration of the strategies with the Government departments is indicated in Table 1.

Table 1 Synergy of strategies with the different departments of the State Government/ Central Government/Research Institutions/Academic Institutions.

S.N.	Department	Strategies					
		I.	II.	III.	IV.	V.	VI.
1.	Agriculture						
2.	Animal Husbandry						
3.	Ayurveda						
4.	Education						
5.	Finance						
6.	Fishery						
7.	Environment, Science & Technology						

No.	Department	I	II	III	IV	V	VI
8.	Forest	■	■	■	■	■	■
9.	Excise &Taxation			■			
10.	Higher Education	■	■	■		■	■
11.	Horticulture	■	■	■	■	■	■
12.	Industries	■	■	■	■	■	■
13.	Information Technology						■
14.	Information and Public Relation	■	■	■			■
15.	Jal Shakti					■	
16.	Medical Education and Research	■		■		■	
17.	Rural Development & Panchyati Raj			■	■	■	■
18.	Planning	■	■				
19.	Tourism				■		
20.	Urban Development		■	■	■	■	■
21.	Energy	■	■	■	■	■	
22.	Women and Child Development	■	■				

  I. Creating Ecosystem for Innovation
 II. Self-employment and Livelihood Security
III. Infrastructure and Human Resource Development (HRD)
IV. Sustainable Management of Natural Resources
 V. Clean and Green Technologies
VI. Delivery System for Science and Technology (S&T) Output

* Grey color specify: Synergy required

# 7. LINKAGE AND SYNERGY WITH UN SUSTAINABLE DEVELOP-MENT GOALS

Sustainable development is to ensure that development takes place in such a way that natural resources are sustained and passed on to the future generations unimpaired. Seventeen Sustainable Development Goals (SDGs) with 169 targets aim to build a prosperous, equal and secure world by the year 2030. The SDGs are indivisible that is no one goal is separate from the others and all call for comprehensive and participatory approaches. Many of the Government's flagship programmes such as Swachh Bharat Mission, Make in India, Skill India and Digital India are at the core of the SDGs. State and local Governments play a pivotal role in implementing many of these programmes. State Governments are to pay keen attention in envisioning, planning, budgeting and developing implementation and monitoring systems for the SDGs. Therefore, any STI policy of the State has to have linkage and synergy with the SDGs. This linkage is indicated in Table 2.

Table 2 Synergy of different strategies with UN Sustainable Development Goals (SDGs).

S. N.	Sustainable Development Goals (SDGs)	Strategies					
		I.	II.	III.	IV.	V.	VI.
1.	No Poverty			�:	▧		
2.	Zero Hunger			▧	▧		
3.	Good health & well being			▧	▧	▧	
4.	Quality Education	▧	▧				

No.	Goal	I	II	III	IV	V	VI
5.	Gender Equity	▦		▦	▦		
6.	Clean water &Sanitation	▦		▦		▦	
7.	Affordable Clean Energy	▦		▦		▦	
8.	Decent work & Economic Growth	▦	▦		▦		
9.	Industry Innovation &Infrastructure	▦	▦	▦			
10.	Reduced Inequalities						▦
11.	Sustainable Cities & Communities	▦		▦	▦		
12.	Responsible Consumption and Production	▦		▦	▦		
13.	Climate Action	▦		▦	▦	▦	
14.	Life Below Water	▦		▦	▦	▦	
15.	Life on Land	▦		▦	▦	▦	
16.	Peace, Justice & Strong Institutions			▦			
17.	Partnership for the Goals	▦	▦				▦

I. Creating Ecosystem for Innovation
II. Self-employment and Livelihood Security
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IV. Sustainable Management of Natural Resources
V. Clean and Green Technologies
VI. Delivery System for Science and Technology (S&T) Output

* Grey color specify: Linkage required

POLICY STAKEHOLDERS
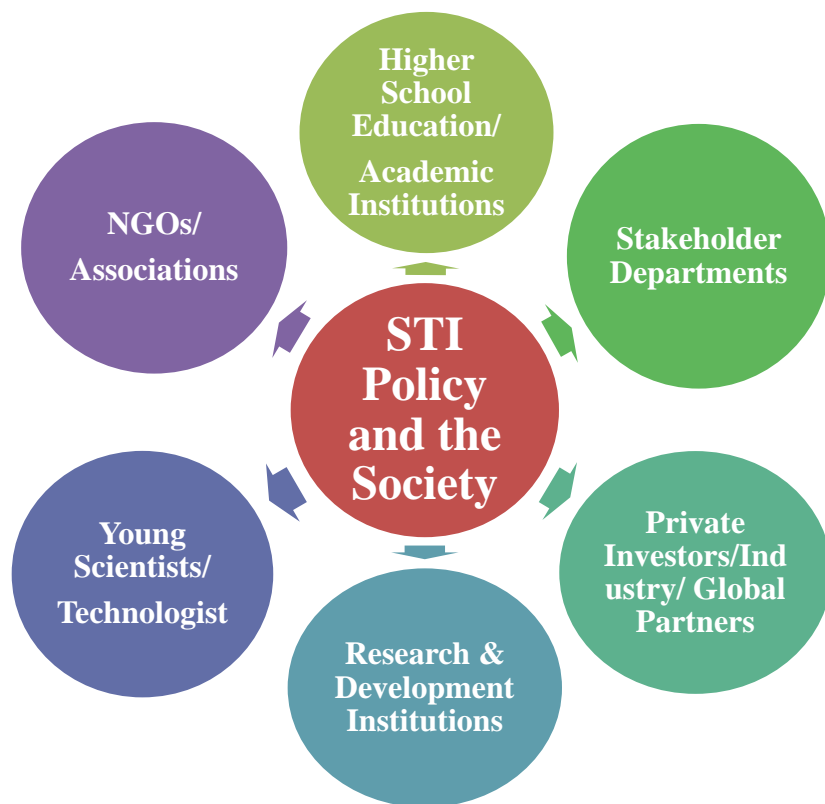
8. POLICY IMPLEMENTATION

The Himachal Pradesh Council for Science, Technology & Environment (HIMCOSTE) in consultation with the Administrative Department (Environment Science and Technology) shall notify the Science, Technology & Innovation (STI) Policy of Himachal Pradesh. The Stakeholder departments will make necessary provisions for the implementation of the policy integrating actions with reference to the strategies in consonance with the Sustainable Development Goals (SDGs). The Department of Environment Science and Technology (DEST) and HIMCOSTE will work for coordination at the Centre and State level for the infrastructure sharing along with other institutes in Himachal Pradesh for the implementation of the policy.

9. OPERATION PERIOD

The policy shall come into force immediately after its issuance by the Government of Himachal Pradesh and shall remain in force for a period of five years or till the existing policy is revised, whichever is earlier.

10. INTERPRETATION

Any interpretation or clarification under the scheme will be decided by the Department of Environment, Science &Technology (DEST) and decision thereof would be final and binding for all.

By order and in the name of Government of Himachal Pradesh.

Additional Chief Secretary
(EST) to the Govt. of
Himachal Pradesh