Chapter 11
Green Entrepreneurship in India: Global Evaluation, Needs Analysis, and Drivers for Growth

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11.1 Introduction and Literature Review

Eco-preneurship or green entrepreneurship is a new term for academic research, although some work began in 1970s, but the topic received a little attention in 1980s and 1990s. The issues like the links between sustainability and innovation, the importance of sustainability in strategic business development are receiving greater recognition and this lays the foundation stone for the creation and growth of viable, commercially successful business ventures (Schaper 2010).

Green entrepreneurship is an eco-innovation to build a low-carbon economy. It promotes the use of green power such as electricity produced from solar, wind, geothermal, biogas, biomass, and low-impact small hydroelectric sources

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(Ghosh 2011). The competition among industries is soaring because of strict environmental conventions like—Montreal Convention, Kyoto Protocol, restriction of the use of certain hazardous substances in EEE (RoHS), and waste electronics and electrical equipment (WEEE), etc. (Chen 2011).

Companies started to publish their social report in 1990 because of the pressure of various stakeholders but it was not the only reason. A lot of them realized that publishing their social contribution is beneficial for them in numerous ways as it creates goodwill and a positive brand image in costumer's minds (Gao 2011).

Atakan and Eker (2007) analyzes CSR as a part of corporate identity creation. Austin and Reficco (2009) describes "Corporate Social Entrepreneurship" (CSE) and other factors like value creation etc. that emerged recently. According to IAEA Report (2005), strategic policy planning and judicious use of resources/technology is important for sustainable economic development.

Dees (2007) emphasizes the role of the government and private–public partnership as a nurturing ground. Drucker (1985) recognizes entrepreneurship education as a discipline which prepares people, especially youth, to be responsible, enterprising individuals. Gibb and Davies (1991), promotes practical approach in pedagogy of entrepreneurship education. Hisrich and Peters (1998) suggests that entrepreneurship students should focus on identifying strengths/weaknesses of different types of enterprises and self-assessment.

Rae (1997) emphasizes the need for development of entrepreneurial skills like leadership, communication, assessment, time management skills etc. in students. Mets (2009) states that the role of entrepreneurship cannot be ignored by the universities anymore; he further states it as catalyze for efficient technology transfer. Maritz et al (2011) promotes application of blended learning along with other pedagogical initiatives.

Vincett and Farlow (2008) corroborate possibility of successfully grafting a highly experiential entrepreneurship course in curriculum of business schools. Sabbaghi (2011) throws some light on the importance of green returns, green volatility factor, green stock returns, and ethical investment. Gertner (2011) emphasis on microdimensions of knowledge transfer partnerships and importance of collaborations of university and industry. Branstad (2011) explores the role of manager role of organizational knowledge mode in hybrid corporate incubator.

Johnston (2011) recognizes seven emerging themes which are important to HEI-industry relationships namely the importance of network intermediaries; flexibility, openness, and connectivity of network structures; encouraging network participation; building trust in relationships through mutual understanding; active network learning; strengthening cooperation through capacity building; and culture change. Al-Mabrouk and Soar (2009), analyzes the ten major issues for successful IT transfer in Arab countries.

McAdam and Marlow (2008) describes role of the university context in networking activities, and in particular, the development of particular types of networks. Tan (2008) explores new types of knowledge precincts as the spatial core of knowledge-based urban development. Andrew (2006) identifies seven incubation strategies for development of rural enterprise. Sharma (2008) identifies facts of effective positioning

mechanism for Indian market. Harrison and Seiler (2011) examines mentoring relationships and career transition from being a corporate employee to becoming an entrepreneur. Terjesen (2011) studies what motivation of eco-preneurs to start businesses.

11.2 Research Methodology

Six structured questionnaires framed on a five-point Likert scale were circulated in addition to extra feedback of respondents on the issues. The following table summarizes the methodology (Table 11.1):

Table 11.1 Methodology details: description of sample selection and survey

Category	Description and sub-categorization	Numbers
Green entrepreneurs	The respondents were selected keeping into mind various kinds of ventures they have created or are into; the present location was also a criterion so that we attain a homogeneous data across the region	34: In person visits
		13: Through phone and internet
		45 finalized at end
Corporate managers	Three different sectors, i.e., multinational corporations (MNCs), large/medium and small were surveyed, i.e., 15 each	35: In person visits
		14: Through phone and internet
		45 finalized at end
Educational entrepreneurship (students views)	Final year students from three management and three engineering institutes of different rankings were surveyed	15 × 3 = 45 (Engg.)
		15 × 3 = 45 (MBA) (in person visits)
Educational entrepreneurship (faculty views)	Responses were taken from three management and three engineering college faculties	3 × 5 = 15 (Engg.)
		3 × 5 = 15 (MBA) (in person visits)
Incubation and technology transfer	It was found that a lot of institutes were writing down entrepreneurship cells run by students as technology business incubation units. So, actual number of incubation centers was too less	Total universe: 8–10
		Surveyed: 5 (in person visits)
Bankers	To study the accessibility of funds views of bankers were indispensable. Personnel from different banks were interviewed	5 (in person/internet)
Eminent personalities	Government officials, prominent academicians and practitioners engaged in the field were interviewed	5 responses (in person visits)
Overall 225 surveys were taken with effective response rate greater than 90 %		

The present study is an attempt to view a holistic picture, i.e., the complete framework. So each possible dimension broadly has been included and then researched in-depth to bring out the results. A pilot study was carried out for each questionnaire so as to improve its correctness, effectiveness and relevance, before it was circulated.

11.3 Data, Interpretations, Analysis, and Recommendations

11.3.1 Dimension One: Green Entrepreneur's

The following tables summarize the findings and analysis of questionnaire responses followed by key findings and their appropriate interpretations (Table 11.2).

11.3.1.1 Findings and Interpretations

1. Most of them said that Government Grants were not at all motivating for them. They seem to be slightly more inclined toward CSR practices of companies (a younger minority).
2. Those entrepreneurs belonging to technological aspects like ICT, Green Technologies were among supporters of business model as the driving factor.
3. Overall mean and high mode indicates that these parameters were critical at their times of resorting to such ventures (Table 11.3).

11.3.1.2 Findings and Interpretations

1. It would not be an exaggeration to say that almost 100 % of the green entrepreneurs agreed that the biggest challenge they faced and still face is fund raising. There is an acute lack of volunteers and staff, which is available and committed for achieving the objectives.

Table 11.2 Criticality of factors for resorting to green entrepreneurship

Parameter	Weight	Group statistical parameters	
Inner conscious	200	Kurtosis	−0.91192
Good business model	160	Skewness	−0.02359
Grants (Govt./private)	125	Mean	3.021739
Tapping the CSR	131	Mode	3
Other Parameters Std. dev. 1.218960059, Variance 1.485863626, Count 184, Total 616			

Table 11.3 Hurdles in running a green enterprise

Parameter	Weight	Group statistical parameters	
Fund raising problems	200	Kurtosis	−0.8854
Lack of staff/volunteers	163	Skewness	−0.06964
Lack of suitable premises	135	Mean	3.321256
Technical and IT barriers	153	Total	1375
Managerial and training barriers	141	Mode	4
Lack of legal knowledge	124	Std. dev.	1.076125
Lack of specialist advice/support	151	Variance	1.158046
Franchising issues	137	Count	414
Tie ups and promotions	171	Standard error	0.052889

2. Green Entrepreneurs face a major problem in setting up their ventures/camps/offices at the real sites of operation. However, many of them have support of local people in case the demand for setup of such a venture is really pressing. For example, local bodies do support camps etc. for rural health ventures.
3. Technical and Information Technology barriers are encountered at several steps. Entrepreneurs are not able to avail basic information and hence lack resource mapping due to lack of expertise and awareness about Information and Communication Technology (ICT) techniques.
4. Further, there are managerial and training barriers of the volunteers and staff. Major chunk of the entrepreneurs are unaware about management techniques like management by objectives, human resource management, creative problem solving, and other tactics which are highly critical for success of any organization.
5. Though many of the entrepreneurs said that they acquired knowledge through advisors/lawyers about the legal aspects of the green enterprises. But there was another half who said that they lack access to informational resources.
6. Entrepreneurs agreed that specialist advice is required in several issues, viz. there is need of advice on green technologies, legal advice on matters of campaigning, camps; advice on rural health strategies, vaccination etc.
7. Little bigger enterprises again find a problem of franchising as there is a lack of common platform, wherein they may find partners. Also, they face problem in accreditation on certain matters, further they lack strategy and manpower both for promotions (Table 11.4).

11.3.1.3 Findings and Interpretations

1. Exceptionally high weight of need of public–private partnership for fund raising indicates the extent of problems they are facing for it. They strongly urge that government and big corporate houses must come forward to help the budding ones.

Table 11.4 Need assessment of public private partnership: tackling the hurdles

Parameter	Weight	Group statistical parameters	
Fund raising problems	208	Kurtosis	−0.83724
Lack of staff/volunteers	168	Skewness	−0.16444
Lack of suitable premises	148	Mean	3.550725
Technical and IT barriers	161	Total	1470
Managerial and training barriers	153	Mode	4
Lack of legal knowledge	148	Std. dev.	1.025622
Lack of specialist advice/support	151	Variance	1.0519
Franchising issues	154	Count	414
Tie ups and promotions	179	Standard error	0.050407

2. Entrepreneurs have agreed that forming a public partnership will help them in finding correct resource people, technical expertise, training support, and importantly tieups and promotions.
3. Entrepreneurs have rated the need of tieups for specialist or legal advice reasonably well (Table 11.5).

11.3.1.4 Findings and Interpretations

1. Clearly one can visualize the dissatisfaction of green entrepreneurs with current registration paradigm and financing schemes run by the government.
2. Low mean, mode, and total indicates discontent, lack of awareness, and extent to which the barriers are posed by policy framework.
3. High standard deviation and very high variance is due to class divide between those aware and those who are totally unaware.
4. Again the table speaks out loudly the need for change in paradigm of registration and grants sanction and the extent of discontent in practitioners on existing practices.

It was also observed that various entrepreneurs were reluctant enough to not focus on government policies in the general impression that no such framework has been prepared for them separately.

Table 11.5 Government policies for green ventures: ease of access

Parameter	Weight	Group statistical parameters	
Registration of green enterprise	83	Kurtosis	−0.68151
Grants under NGO financing	76	Skewness	0.099479
Tax laws and funding information	82	Mean	1.972826
Public interest litigation	122	Mode	2
Other parameters Std. dev. 1.273659438, Variance 1.622208363, Count 184, Total 363			

11.3.2 Green Entrepreneurs Framework: Recommendations and Solutions

1. There is a strong need of public–private partnership model to be developed for help of green entrepreneurs. The ways may be informal or formalize through formation of some body that governs and monitors such relation and provide an opportunity for the two to interact.
2. There is a major need of change in grants and registration paradigm. There is a need of web-based automation up to an extent so that at least basic processes can be completed online by the entrepreneur.
3. Awareness has to be brought about provisions for green entrepreneurs through mass media as well as specific targeting so that they may avail or at least become aware of the provisions.

11.3.3 Dimension Two: Corporate and Their Responsibility

Corporate can largely affect the green entrepreneurship scenario through the part they can play as their green responsibility by either directly serving green causes or contributing to sustainable development (Table 11.6).

11.3.3.1 Findings and Interpretations

1. Clearly the picture of reasons of companies resorting to CSR practices is brought out here:
    i. Managers agree that the societal responsibility of company is important, as total represents a very adequate weight age to the same.

Table 11.6 Corporate green responsibility: parameters for resorting

Parameter	Sum	Statistical parameters (overall)	
Societal responsibility	159	Kurtosis	0.508112
Sustainable development	134	Skewness	−0.98759
Brand image creation and improvement	172	Mean	3.258537
Improvement in sales	133	Std. dev.	1.326246
Tax and other subsidies	137	Mode	4
Other parameter Variance 1.758928571, Count 225, Standard error 0.088416403, Total 735			

ii. However, the managers show least concern about sustainable development aspect of CSR, through interviews and interaction the picture becomes clearer. Actually, the companies and managers are not aware of what sustainable development actually means.
iii. Most of the management agrees that resorting to CSR is instrumental in their brand creation. CSR is able to get them the required connect with the society.
iv. The government tax concessions and subsidies is a factor feasible enough to drive some companies to CSR practices.

2. The mode for the overall observations is 4; this indicates that these factors are important considerations that run into the think tank of company management when they explore corporate green responsibility aspects.
3. Skewness and Kurtosis indicate orientation to right and thinner tails indicating coherence in opinions of the various respondents (Table 11.7).

11.3.3.2 Findings and Interpretations

1. The corporate have shown high concern toward nature conservation practices and also they feel that green technologies need to be promoted for sustainable development.
2. However, it seems that they are not much ready for CSR in recycling initiatives. They say these initiatives to be less productive as compared to others.
3. Some companies are more interested in societal issues like child, old and women welfare, i.e., they are more interested in green entrepreneurship rather than sustainable development.
4. Some corporate people strongly believe that rural job creation is too important for sustainable development and they further have advocated that CSR would find its real meaning when it further creates source of livelihood (Table 11.8).

Table 11.7 Corporate green responsibility: need of inclusion for sustainability

Parameter	Sum	Statistical parameters (overall)	
Recycling operations	139	Kurtosis	0.198559
Green technologies	156	Skewness	−0.96457
Nature conservation	163	Mean	3.390244
Other parameters Mode 5, Std. dev. 1.5165, Variance 2.299944721, Count 135, Total 458			

Table 11.8 Corporate green responsibility: hurdles and distractions

Parameter	Sum	Statistical parameters (overall)	
Financial crunch	117	Mean	−0.599
Lack of vision (perceived benefits)	134	Mode	−0.42603
Other parameters Mean 2.743902439, Mode 4, Variance 1.80886392, Count 90, Total 251			

11.3.3.3 Findings and Interpretations

1. The corporate say that they already face financial crunch so it becomes difficult to allocate separate funds each time for CSR.
2. However they also agreed that there is a lack of awareness in top management about long term benefits of CSR. It is still believed to be a liability not a responsibility.
3. Negative values of kurtosis can be interpreted as the middle management agrees that companies have funds but the top management just does not want to spend anything for the society. It is an indicator of self nourishing tendency of the corporate.

11.3.4 Corporate and Their Responsibility: Recommendations and Solutions

1. Still the major chunk of corporate considers CSR as liability not responsibility, the thinking can again be changed gradually only by showing them the perceived benefits of the same.
2. The green entrepreneurs should ensure that if corporate is coming out and extending help, they must help in image improvement exercise of the same in turn, though this matter is again subjected to critical thinking and analysis.
3. There is an increased need of support by corporate for Sustainable R&D. Ventures may be funded by them provided it does the real environmental good making some monetary profit at the same time.
4. Again the rural empowerment seems to be an area of interest, so there lies an opportunity for ventures to take their support and help in rural job creation which in turn may support the corporate production paradigm
5. There is need that Government plays its part by offering some benefits to corporate for their Corporate Green Ventures. The support is required at least in promotion and policies if it could not be money or financial leverage.

11.3.5 Dimension Three: Entrepreneurship Education

11.3.5.1 Students Perspectives

The following section presents the interests, needs, and beliefs of budding entrepreneurs. The survey includes equalized number of Master of Business Administration (MBA) and Bachelor of Technology (B.Tech) students (Table 11.9).

11.3.5.2 Findings and Interpretations

There exists an interesting contrast between the opinions of graduation (B.Tech) and postgraduation students on certain issues, while on some they have a similar consensus.

1. Business students seem interested and have better understanding of tapping the CSR opportunities for green entrepreneurship.
2. Also business students rate green entrepreneurship can be a good business model or career path.
3. Business students have shown more concern toward globalization and resource depletion again reflecting the positive change pattern.
4. High mean, mode, and total indicate that youth is coming out of traditional thinking about the green entrepreneurship and is developing a hybrid thinking wherein both service and business models are in the mind of an individual.
5. The statistical parameters when analyzed for the whole group seems to be much more coherent and concentrated, thus it helps to summarize the thinking of youth into similar categories. Low variance about mean as well as low standard deviation about mean indicates the presence of coherence and central tendency in the nature of thinking of the two. Also the values tend to fall toward right of the mean (Table 11.10).

Table 11.9 Criticality of factors for green entrepreneurship: students assessment

Parameter	Weight		Combined analysis of statistical parameters	
	MBA	B.Tech		
Concern about depletion	172	160	Kurtosis	−0.12419
Rural scenario assessment	170	167	Skewness	−0.41328
Meeting globalization	170	161	Mean	3.594444
Good business model	167	152	Variance	0.969876
Grants (Govt./private)	149	154	Mode	0.946778
Tapping the CSR	168	151	Std. dev.	0.059025

Table 11.10 Focusing societal issues in educational paradigm: need assessment

Parameter	Weight		Combined analysis of statistical parameters	
	MBA	B.Tech		
Concern about depletion	178	178	Mode	−0.34625
Rural scenario assessment	173	182	Std. dev.	−0.43956
Meeting globalization	174	172	Variance	3.7
Good business model	154	153	Count	1.021535
Grants (Govt./private)	163	159	Standard error	1.044885
Tapping the CSR	170	142	Total	0.062169

11.3.5.3 Findings and Interpretations

Again the contrast between the opinions of graduation and post graduation students is visible:

1. The result interprets that the post graduation as well as graduation students demand the current scenario paradigm to be included in the curriculum. They are concerned about resource depletion as well as rural empowerment.
2. MBA students strongly lay importance of inculcating the inner consciousness aspect as well as defining the CSR perspective in the curriculum.
3. An overall good weight age of each parameter indicates that students show a good concern and express need for inculcating the above parameters so that it develops a holistic mind set of youth for resorting to green entrepreneurship as a career option.
4. A high mean, mode, and even a very high total clearly advocate the change demanded by the youth demography in their educational paradigm so that they may know the real societal scenario and may make their careers in an area wherein they also contribute to sustainable development.
5. Group statistics again indicate the central tendency though (Table 11.11).

Table 11.11 Entrepreneurship education instruments: importance assigned youth

Parameter	Weight		Group statistical parameters	
	MBA	B.Tech		
Sustainable and societal case studies	161	145	Kurtosis	−0.34625
Knowledge about national policies	169	154	Skewness	−0.43956
Knowledge about green venture fund raising	164	159	Mean	3.7
Incubation and technology transfer	178	150	Mode	1.021535
NGO academia partnership	149	153	Std. dev.	1.044885
Visioning, creativity and opportunity identification	182	167	Variance	0.062169

11.3.5.4 Findings and Interpretations

1. The data analysis clearly reveals that management students assign a high importance to case study methods, incubation knowledge, policy and fund raising knowledge, and opportunity identification tactics as a key input to development of entrepreneurial spirit in the youth.
2. The graduation students though seem to be less aware and concerned relatively have marked these factors too as very important
3. NGO academia partnership has been rated good but still lowest among the factors. Those who marked it high said the need of developing a training partnership paradigm (Table 11.12).
4. A high mean, mode, and total again speak out the importance of these factors with respect to thinking of youth about developing and encouraging green entrepreneurship.
5. Kurtosis is positive indicating that the tails are "heavier" than for a normal distribution.

It is to be noticed here that teaching pedagogy are different in undergraduate and postgraduate studies. So, definitely the postgraduation candidates have an upper hand in understanding and interpreting the aspects of green entrepreneurship paradigm.

11.3.5.5 Findings and Interpretations

1. The result interprets that the post graduation students lay high stress on the case study method to have a better understanding of the scenario. Further they want to get enriched with the actual knowledge of being sustainable and doing actual

Table 11.12 Entrepreneurship education instruments: need for change

Parameter	Weight		Group statistical parameters	
	MBA	B. Tech		
Sustainable and societal case studies	172	144	Kurtosis	−0.44549
Knowledge about national policies	174	163	Skewness	−0.26959
Knowledge about green venture fund raising	163	156	Mean	3.575926
Incubation and technology transfer	179	145	Mode	0.933492
NGO academia partnership	151	150	Std. dev.	0.887491
Visioning, creativity and opportunity identification	158	160	Variance	0.05681

Table 11.13 Entrepreneurship education paradigm: importance assessment

Parameter	Weight		Group statistical parameters	
	MBA	B.Tech		
Government efforts	158	144	Kurtosis	0.057067
Promotional societies	173	163	Skewness	−0.36971
Need as separate discipline	179	156	Mean	3.546296
Need of specialized faculty	158	145	Mode	0.926363
E-governance and IT facilitation	166	150	Std. dev.	0.862984

green entrepreneurship. The low interest of graduate students may be attributed to lack of awareness and concern about the issue in comparison to MBA students.

2. MBA students again strongly lay importance on inclusion of national policies and fund raising knowledge more strongly. However, techno graduates do acknowledge the importance of the inclusion of the same in the curriculum (Table 11.13).
3. An important difference again is noticeable on the issue of incubation and technology transfer. The issue critically deals with sustainable development in future. There is both a lack of knowledge and awareness in graduation students about incubation and technology transfer concepts and importance. Even many of them were even not aware about the same.
4. MBA students have again laid stress on learning from critical incident methods by discussion in the class room environment about critical day to day incidents.
5. A high mean, mode, and even a very high total clearly advocate the change demanded by the youth demography in their educational paradigm so that they may know the real societal scenario and may make their careers in an area wherein they also contribute to sustainable development.
6. Both have laid similar stress on NGO Academia partnership and developing the spirit of opportunity identification through the curriculum.

11.3.5.6 Findings and Interpretations

1. Most of the students in graduation do not know about the government efforts to promote green entrepreneurship. Also they are unaware about promotional societies working at national level. Still management students have rated the importance of both of them quite high. According to them both of them are very essential for outreach awareness and actually bring the change.
2. Management students have rated importance of developing green entrepreneurship as a separate discipline high. However, technical students were quite varying on their perception but overall total stands good.

Table 11.14 Entrepreneurship education: need for change in current paradigm

Parameter	Weight		Group statistical parameters	
	MBA	B.Tech		
Government efforts	161	154	Kurtosis	−0.81089
Promotional societies	146	106	Skewness	−0.38413
Need as separate discipline	140	126	Mean	3.26
Need of specialized faculty	166	147	Mode	1.303321
E-governance and IT facilitation	177	152	Std. dev.	1.842321

3. Each of them indicates that having a specialized faculty for teaching green entrepreneurship that can share with them actual real-life experiences and different cases through class room teaching is vital toward developing the spirit.
4. Both the categories of students rate importance of IT and e-governance promotion very high to develop, nurture, and implant the spirit. Though many were not aware about it, still the overall total stands apart (Table 11.14).

11.3.5.7 Findings and Interpretations

1. Need of reframing paradigm to have increased government and promotional societies impact on the green entrepreneurship aspects has been encrusted by all, whether aware or not.
2. Management students have indicated high inclination toward developing green entrepreneurship as a separate discipline. Technical students too have indicated similar interest; many said that it could be an optional subject.
3. High need of specialized faculty and IT facilitation is indicated by the results here.
4. A negative value of Kurtosis indicates that data is not tethered in one direction.
5. High values of standard deviation and variance indicate that data not only deviates from the mean but also from each other. This parameter indicates that there is a drastic difference between opinions of students.
6. The reason for such uncertainty in results is due to lack of awareness among various clusters of students from different colleges of different tiers.

11.3.5.8 Faculty Perspectives

The comprehensive analysis of discussions with 30 faculties has been summarized here. Faculties have shown a concern about depleting resources as one of the factors. MBA faculty also seems to be more persuasive on showing the business aspects of the green entrepreneurship to students. They advocate that the same will remove the insecurity about a safe career option from youth. Further, lack of

awareness about concepts of CSR etc., attribute to the lower overall concern about the related business aspects. The incubation and technology transfer concepts have been stressed upon by technology faculty. They state high need of NGO academia partnership also. NGO academia partnership model needs to be worked upon before implementation, as many of them said, so the overall rating is comparatively low. Both rated e-governance and IT promotion as important factors for green entrepreneurship development. They also stated that the role of promotional societies is important for making the students aware about green entrepreneurship paradigm and career pathway B.Tech faculty state the need of separate faculty as important. As they mostly deal with technical subjects and are not able to handle the managerial concepts that well. Most of the MBA faculty said that one of the faculties can handle the subject quite well.

11.3.6 Entrepreneurship Education: Recommendations and Solutions

1. Students want to know about green aspects of their life, how the inner conscious drives one; they are concerned about environment and globalization scenario also they want to know the business aspects of it. Keeping in view the recommendations of faculty about the same a deep knowledge of the life cycle of green enterprise, critical factors of society, need for green entrepreneurship, environmental needs, and controlled business aspects be shown to the students through the curriculum.
2. There is a demand for knowledge about national policies, incubation, and technology transfer and sustainability aspects; the same needs to be imparted through the case teaching methods wherein students can actually visualize the situation and try to find out solutions.
3. There is an increased need of popularity of government efforts to support promotional activities of green entrepreneurship. Also, the societies need to reach far flung colleges so that the students become aware what actually green entrepreneurship is and why it is required to be sustainable.
4. There is demand for green entrepreneurship as a separate discipline. If it is not possible than at least some basic part be included in regular curriculum and also it may be an optional subject too. There is need of concept inculcation at primary and UG level.
5. There needs to be more focus on green and sustainable technology development in engineering and on green supply chain practices in management curriculum.
6. Either a new faculty is to be recruited or the existing faculty is encouraged to gain expertise. Higher institutions of learning can conduct societal development programs(SDPs) like the way they do it in management and faculty development programs wherein they train mixed batches of practitioners, academia, and corporate.

Table 11.15 Support through incubation in current context

Parameter	Sum	Statistical parameters (overall)	
Business creation and survival	19	Mean	3.7
Registration and other legal issues	19	Mode	4
Innovations commercialized	18	Kurtosis	0.056051
Investment by venture capitalists	19	Skewness	−0.14084
Knowledge of intellectual property rights	17	Std. dev.	0.702213
Research and development	19	Variance	0.493103
Other parameters Count 30 Total 111 Standard error 0.128206			

7. There is a moderately high demand of NGO academia partnership so that students gain knowledge of actual societal problem and the challenge to handle them.

The entrepreneurship education needs to be powerful enough to provide a vision and opportunity identification technique to the budding entrepreneurs in colleges.

11.3.7 Dimension Four: Incubation Centers and Technology Transfer

This section describes how the university incubation and technology transfer centers have been functioning and working to improve the sustainability paradigm. These may be very critical for sustainable development in future (Table 11.15).

11.3.7.1 Findings and Interpretations

1. Incubation centers help in business creation/survival, registration issues, arranging the venture capitalists, and importantly R&D.
2. However, they are less helpful in providing IPR knowledge and getting the innovations patented and commercialized (Table 11.16).

Table 11.16 Support through incubation: change required in Indian context

Parameter	Sum	Statistical parameters (overall)	
Business creation and survival	19	Mean	3.7
Registration and other legal issues	20	Mode	4
Innovations commercialized	22	Kurtosis	0.056051
Investment by venture capitalists	20	Skewness	−0.14084
Knowledge of intellectual property rights	17	Std. dev.	0.702213
Research and development	21	Variance	0.493103
Other parameter Count 30 Total 111 Standard error 0.128206			

11.3.7.2 Findings and Interpretations

1. Incubation centers suggest need of improvement providing IPR knowledge and getting the innovations commercialized.
2. There is further need of strengthening R&D efforts and legal issues.
3. Positive kurtosis indicates the noncentrality of the response distribution (Table 11.17).

11.3.7.3 Findings and Interpretations

1. Incubation Centers are able to solve fund raising/Technical/Premises Problem to a greater extent for the sustainable start ups.
2. They have raised the issues of lack of managerial expertise/franchising issues as well as promotional issues.
3. As per the comments of incubation center personnels and companies, the incubations are far from developing green ventures; however, they are slightly working on sustainable development aspects related to technology.
4. Negative kurtosis and skewness describe nondispersion and values on right of mean (Table 11.18).

11.3.7.4 Findings and Interpretations

1. They advocate need of improving fund raising tie ups, removing managerial barriers that will strengthen franchising issues and legal knowledge.
2. Most of them told that they are able to solve the issues of lack of volunteers, premises-related problems for supporting the green venture.

Table 11.17 Possibility of support by incubation center

Parameter	Sum	Statistical parameters (overall)	
Fund raising problems	20	Mode	4
Lack of staff/volunteers	18	Kurtosis	−0.62261
Lack of suitable premises	19	Skewness	−0.48574
Technical and IT barriers	20	Std. dev.	0.927857
Managerial and training barriers	16	Mean	3.966667
Lack of legal knowledge	18	Variance	0.86092
Lack of specialist advice/support	19	Standard error	0.169403
Franchising issues	11	Total	119
Tie ups and promotion	14	Count	30

Table 11.18 Need of strengthening up tieups for support improvement

Parameter	Sum	Statistical parameters (overall)	
Fund raising problems	19	Mode	4
Lack of staff/volunteers	13	Kurtosis	−0.62261
Lack of suitable premises	15	Skewness	−0.48574
Technical and IT barriers	18	Std. dev.	0.927857
Managerial and training barriers	17	Mean	3.966667
Lack of legal knowledge	18	Variance	0.86092
Lack of specialist advice/support	16	Standard error	0.169403
Franchising issues	17	Total	119
Tie ups and promotion	16	Count	30

3. Negative kurtosis indicate central tendency and high mode indicates willingness.
4. High mean indicates that the above parameters are well acknowledged by the respondents as in relation to the subject (Table 11.19).

11.3.7.5 Findings and Interpretations

1. The incubation is highly low in the field of environmental concerns. Hardly one or two companies are incubated that too are working on reducing carbon chains.
2. However, the scenario is quite better in case of green technology and rural development.
3. Regional inclusion has been a part of strategy of some of the incubation centers.
4. However, still health care, manufacturing, and biotechnology aspects that can affect sustainability are hardly practiced there.
5. A good amount of potential exists in ICT development (Table 11.20).

Table 11.19 Dimensions: possibility of support through incubation

Parameter	Sum	Statistical parameters (overall)	
Tracing environmental footprint	9	Kurtosis	−1.09769
Information technology	16	Skewness	−0.20156
Green technologies	17	Mean	2.76
Rural employment technologies	17	Total	138
Agricultural innovations	15	Mode	4
Regional regeneration and social inclusion	16	Std. dev.	1.134973
Biotechnologies development	12	Variance	1.288163
Resource conservation technologies	14	Count	50
Healthcare innovations	11	Standard error	0.160509
Sustainable manufacturing	11	Range	1–5

Table 11.20 Need for knowledge sharing and improvement

Parameter	Sum	Statistical parameters (overall)	
Tracing environmental footprint	22	Kurtosis	−0.26538
Information technology	15	Skewness	0.010295
Green technologies	19	Mean	3.58
Rural employment technologies	18	Total	179
Agricultural innovations	17	Mode	4
Regional regeneration and social inclusion	18	Std. dev.	0.758355
Biotechnologies development	14	Variance	0.575102
Resource conservation technologies	22	Count	50
Healthcare innovations	16	Standard error	0.107248
Sustainable manufacturing	18	Range	1–5

11.3.7.6 Findings and Interpretations

1. Incubation centers express need of a major re-engineering on dealing with environmental and resource conservation technologies.
2. Further regeneration has been demanded in fields like regional regeneration to actually affect the prosperity of people in the area or the population to which the center can cater to.
3. Still low totals on biotechnology, health care indicate the perspectives in these areas not to be very good.
4. Sustainable manufacturing has been suggested as important by major engineering incubation centers, but they also said that it is not really easy because manufacturing engineers have to be trained to what sustainability is ad what are the measures for the same.

11.3.8 Incubation Center and Technology Transfer: Recommendations and Solutions

1. Still major incubation centers accept that they are not functioning up to that mark where they can actually affect the societal paradigm of the region, thus there seems to be a major need of awareness of the concept through education.
2. There seems to be an acute need of strengthening networks and more need of government and university efforts to give extra leverage and facilities to social and sustainable ventures.
3. There is a major need to focus on the health care, rural, green, and environmental technology again for that government funds will be required for these specific areas. Angel funders and Investors need to be collaborated too.

4. Actual meaning of technology transfer need to be made understandable to youth as well as the incubate so that it can find its true meaning and incubation centers are utilized for what they are meant apart from profit venturing, i.e., the societal good and sustainable development.

11.3.9 Dimension Five: Banking Support to Green Ventures

Based on comprehensive and strategic discussion with the bankers from five different banks including public sector banks, following is summary of discussion. The numeric details of the survey results are skipped to make the chapter in the provided word limit. The various parameters covered were namely, inability to offer collateral, potential success, lack of knowledge, and credit history. Microfinancing gets difficult as banks are not able to visualize the success of enterprise and thus the safety of their money. Even after overlooking credit history/collateral details, lack of knowledge and paper work stands as major barrier. Bankers have indicated high need of enhancing cash flows from commercial banking to such institutions so that both are benefitted. It has been agreeably true to ask microfinancing institutions to access main stream capital markets for fund raising through venture capitalist, angel funders etc. A major problem lies with the success forecast of microsocial enterprise. Creation of intermediaries may be a solution for such problems. These bodies will have local reach and would be able to sense and understand better the situation of enterprise and will be beneficial to banks too. However, there has to be a check on the operational paradigm of the same if created.

11.3.10 Dimension Six: Viewpoints of Eminent Personalities

This section includes the summary of talks with people of recommendable positions of academia like VCs, of government like Joint Secretary and policy formers, and some other socially known names from corporate and social fields. The key points may be enlisted as:

1. It is not easy to identify the real intentions of a person/corporate behind social efforts. Sometimes it is just an abstraction of malpractice so government cannot always ease out processes.
2. People lack awareness about existing paradigm for them, there are gaps on promotional part; but the reluctance of middle bureaucracy is the cause of problem.
3. It is good to highlight green entrepreneurship and sustainability as a discipline so that youth is connected to it; they should be shown ethical dimensions from school To find the real purpose of sustainability through incubation is not possible without academia–corporate partnership and mentoring but, the later

shows lesser interest. Academia will have to come out with solutions to tackle this problem.
4. A mass awareness has to be brought about than only the objective of prosperity may be met. Education and government support is the success solution possible.
5. Public–Private Partnership is good for such a cause; however, corporate will need to have a sense of responsibility to do the same; it is a moral binding, no rocket science should make it a compulsion.

11.4 Limitation and Road Ahead for the Research Work

The present study could have gone deeper indicating sub classifications, dimensions age, gender-based variance analysis, and using techniques like ANOVA (Analysis of Variance) etc. to a deeper sense to bring out more interpretations. The sample size could have even been larger, but since the chapter aims to bring out an overall framework, so that was limited considering the time and funding factors. However, the work has progresses much which could not be included in the paper to maintain the homogeneity. We aim to do the same and include more precise results on an increased collection of data so that results get more refined till the time of camera-ready submission.

11.5 Conclusion

The popularity of green entrepreneurship and sustainable development as a concept is growing at a moderately good pace in India despite the fact that the current economic scenario does not seem to be a nurturing ground and post recession ripples are still to be won over. In the last 3 years, more and more citizens and specially the youth are developing interest in this field including those who have just completed their education from prestigious Stanford, MIT, and Oxford. This new evolving field has also got early venture capitalist interested in funding with many seeking out such enterprises that hold out huge potential. However, as the green sector has been coming in touch with the private sector, the initiatives that the government is taking —though still not that much adequate, the scenario has begun to change for sure, a realization has also been formed that a single-minded approach of either being pure philanthropic or a pure capitalist is insufficient to serve the purpose of the society. Along with this many other major and minor changes in educational setup, administration, e-governance, funding, awareness programs needs to be taken care off. We agree that these changes are being taken care off but the pace of the change is far too slow to meet the requirements. We strongly recommend the findings to be applied in the respective fields so that the society as a whole moves together toward a better life, a sustainable environment, and a better tomorrow.

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