

**Education for Sustainable Development**  
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**Lecture - 15**  
**ESD for Technical and Vocational Education / Training (CONTD.)**

Hello, everybody. Welcome back to this class on ESD and last class we are discussing about ESD, its role in technical and vocational education and training.

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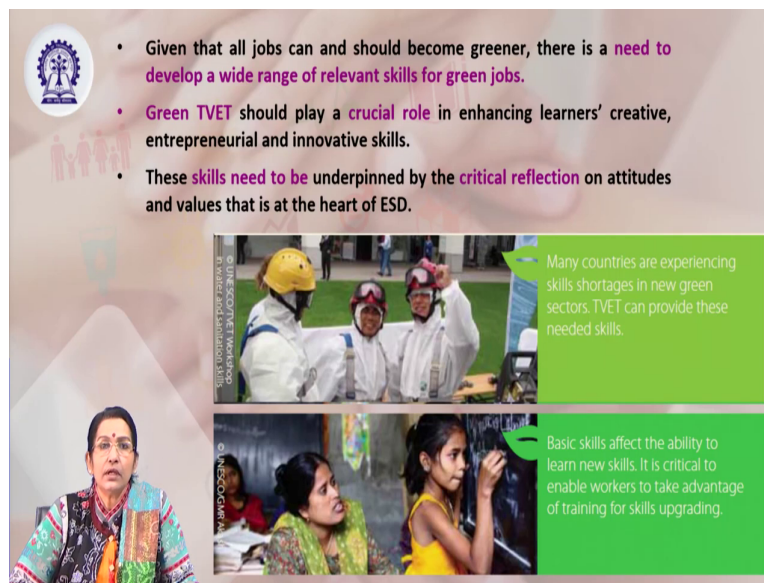
- **Green jobs and green skills-**
  - Green jobs are not confined to jobs in new green sectors such as renewable energy.
  - A **global study** on **skills for green jobs** by the ILO – covering 21 countries representing 60 per cent of the world population – indicates that sweeping changes will take place in skills profiles within existing occupations.

So, today we will just continue with that. So, that is we were talking about the green jobs, green skills all kinds of things. So, green jobs are not confined actually to the new green sectors such as renewable energy or agriculture, but green jobs means what is the with the minimum carbon footprints.

So, a global study on the skills for the green jobs actually conducted by ILO; International Labour Organizations. So, covering 20 countries represent 60 percent of the world population indicates that sweeping changes will take place in the skills profile in the existing occupation and especially in post pandemic, especially post pandemic and these online platforms and virtual workplace.

So, the importance of the green jobs and the green skills have been enhanced like anything. So, we have to focus on more on the green jobs, green skills, green competences and, how to prepare our manpower our human resource in that line. And again to create more green jobs also employment to generate regenerate new employments which are which carry the minimum carbon footprint, minimum pollution, minimum disturbance to the ecosystem. So, let us talk about the requirements.

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- Given that all jobs can and should become greener, there is a **need to develop a wide range of relevant skills for green jobs.**
- **Green TVET** should play a **crucial role** in enhancing learners' creative, entrepreneurial and innovative skills.
- These **skills need to be underpinned** by the **critical reflection** on attitudes and values that is at the heart of ESD.

Many countries are experiencing skills shortages in new green sectors. TVET can provide these needed skills.

Basic skills affect the ability to learn new skills. It is critical to enable workers to take advantage of training for skills upgrading.

So, given all that given that all the jobs can should be become it should become a very greener and more eco-friendly and more sustainable etcetera. We need to develop wide range of relevant skills and competencies. So, let us see what are these competencies. So, the green TVET; Green Technical and Vocational Educational Training thus plays a very crucial role in enhancing these creative entrepreneurship into innovative skills, competencies for the green jobs.

So, therefore, these skills need to be need to be underpinned, need to be included need to be embedded in the curriculum in such a way that it improves, it encourages, it motivates the learners to have to develop this critical reflection or no critical reflection having the positive attitude and the values towards ESD towards eco-friendly system, eco-friendly behavior.

So, many countries have already adopted this kind of things. Many have already adopted especially in European and Asian countries as well as the African countries, but let us provide how this new green sector can flourish, how this new green sector can provide the suitable trainings training to nurture to groom these kind of green skills and competencies among our manpower among our people.

So, the basic skills affect the basic skills like numeracy skill, literacy skill then ICT skills these are considered as the basic skills. So, including the basic skills the critical skills on these greens on this green competency green skills it enables the worker to have an extra advantage over the jobs, extra advantage over the green sector in upskilling and in upskilling themselves.

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Not all new skills are technical. Green TVET should enhance learners' skills in problem solving, analysing complexity, and exploring more sustainable forms of production and consumption.

### Aligning TVET with green society and economy-

1. A 'green economy' has four interconnected and mutually dependent goals : increasing economic growth, alleviating poverty by reducing unemployment , increasing social inclusion and equity, and reducing greenhouse gas emissions.
2. Transitioning to a 'green economy' is more than a short-term response to current global crises. It can be a long-term strategy for sustainable development and poverty alleviation.
3. Achieving these goals will require existing education and vocational training systems to be capable of equipping all individuals with the requisite breadth of competencies needed to take full advantage of the opportunities being generated by the 'green economy'.

So, here again it shows that some of the clipping shows that how to align this technical and vocational education with the green society and the green economy that is the thing. So, the green economy it has you know, it has four connected mutually dependent goals. There let us discuss green economy. When we talk about the green society all automatically green economy comes in.

So, this green economy has a four interconnected and mutually dependent goals versus that increased economic growth. Increase economic growth definitely will remove it alleviate

poverty by reducing unemployment, by increasing the social inclusion, equity, equal distribution of resources and reducing the greenhouse emission, greenhouse gas emission.

So, this is the first component of the green society and green economy and how to embed the TVET in that. So, green economy has these four interconnected variables. So, then the next is the transitioning to the green economy. It is more of a it is more of a planning is more of a long term strategy for the sustainable development and than just for the short term purpose or than just for the poverty alleviation etcetera, but it has a long term planning, long term strategy, long term purpose.

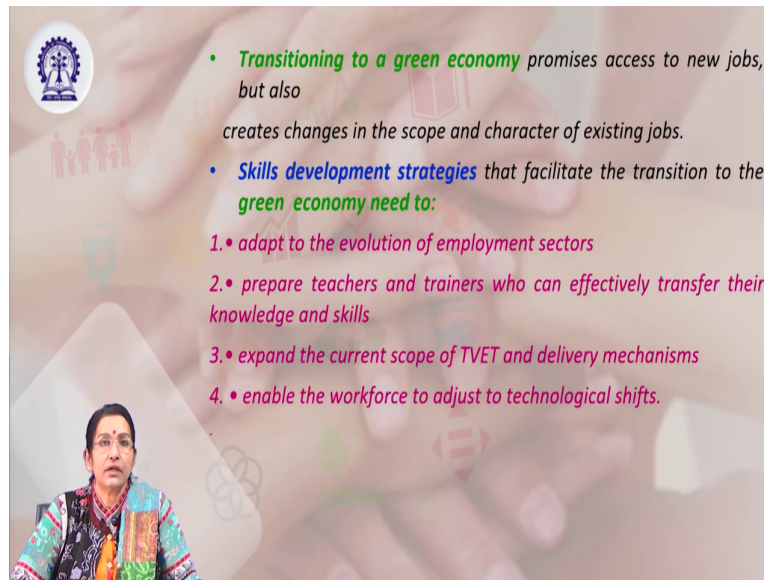
So, now like for example, in our government all these five year plans all these planning commissions, new schemes and strategies governments new schemes and strategies are actually part of this kind of thing; how to transition to bring transition to a green economy from the present state of affairs to meet the to meet to respond to the global crisis.


To the global crisis like the economic slowdown, unemployment or poverty alleviation or you know creating more jobs for them for and developing the man skilled, manpower all kind of these are the global challenges global crisis. So, how to face this thing, how to transit, how to learn transit, how to mobilize, how to moderate our economy towards the green economy; this is the second domain.

Then the third domain is that educational vocational training system to be capable of equipping all the individuals with this kind of competencies. The third part is that training aspect that is the what sort of educational vocational training system should be introduced.

So, as to capable so as to develop this capability, this competencies, these skills among the among our resources among our individuals among our people so that we can take the full advantage of this green economy. So, in order to in-cash in order to leverage green economy we have to put such kind of training and competency development schemes in the curriculum as well.

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- **Transitioning to a green economy** promises access to new jobs, but also creates changes in the scope and character of existing jobs.
- **Skills development strategies** that facilitate the transition to the green economy need to:
  1. • adapt to the evolution of employment sectors
  2. • prepare teachers and trainers who can effectively transfer their knowledge and skills
  3. • expand the current scope of TVET and delivery mechanisms
  4. • enable the workforce to adjust to technological shifts.

So, the next is that transitioning to a green economy ok transitioning to a green economy, it promises access to the new jobs ok. It not only promises access to new jobs, but also creates the changes in the scope and characteristics of the existing. So, when we compare to the our existing jobs with the green jobs it has feature, it has the differences in its features, in its operations in its characteristics.

So, how the how what are these key features of this green economy? So, the skill development strategies also facilitate the extension of the green economy, the skill development strategy is also facilitated. So, what are these things? I have to adopt to the evaluation of employment sector then prepare the teachers and trainers who can effectively transfer that knowledge and the skills and expand the current scope of deviate and delivery mechanism and enable the workforce to adjust to the technical shift.

So, these are the primary areas that how to train not only just changing the curriculum and introducing the tools its will be enough, but how to make the employee make the people, make the jobs more suitable towards this green sector and prepare the teachers and the trainers and to possess to learn, to acquire the new knowledge and the skills and competencies which can be easily transferred to these green jobs.

And, expand the scope horizon of this technical and vocational education and its delivery mechanism towards the green jobs, its scope and opportunities and enable the workforce to adjust to the technical shift that is the innovation that is coming up every moment that is the technical changes, innovative changes that is coming up, how to again to train them also to update themselves in the technical shift technological shift as well.

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So, now the thing is that how to that means, it is not just its not just creating the green jobs or green planning policies etcetera, but thing is that there are certain steps, there are certain steps that we need to follow we need to understand so far because when we it is again it is a learning cycle, it is the new learning cycle new phase of understanding the green TVET process.

So, let us go step by step in a progressive way and how can we introduce this TVET to the TVET concepts. So, first thing is that the first step is that understanding the green TVET process. The first term that with the meta-analysis with the detailed study with the in depth analysis we can. Now, we have to we have to break it down into the systematic and inductive process in a sequential way.

So, first thing that is that the clarifying the green concepts, what is that greening concept. It is a continuous process. It is a continuing process not just only particular time particular job

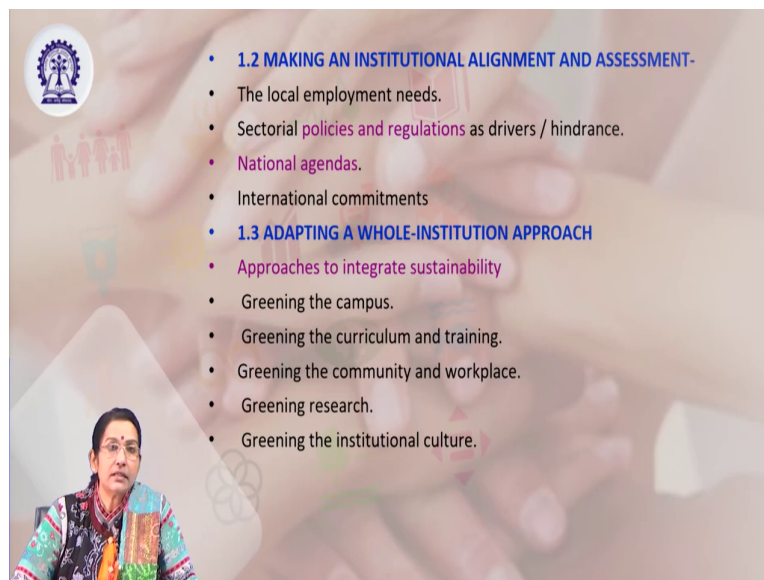
etcetera. So, it is a continuous process how we have to understand it that is it is a continuous process based on the economical, social and environmental imperatives. Sustainability approaches within an institution and wide action.


First thing is that, whatever job we are creating whatever skill we are introducing whatever competency we would like to introduce that we have to analyze it from three dimensions. First is that is economical aspect whether it is cost effective or not, social aspects its implications for the society for the people for them.

And the environmental implications and the environmental implications; that means, how it is what its impact on the environmental ecosystem that is its imperatives for the environmental ecosystem whether it is protecting, restoring or with minimum damage with the minimum carbon footprint.

And moreover, the sustainability approach also it is within the institution outside the institutions, within the country outside the country because again we are talking about this in the global context.

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- **1.2 MAKING AN INSTITUTIONAL ALIGNMENT AND ASSESSMENT-**
- The local employment needs.
- Sectorial **policies and regulations** as drivers / hindrance.
- **National agendas.**
- International commitments
- **1.3 ADAPTING A WHOLE-INSTITUTION APPROACH**
- **Approaches to integrate sustainability**
- Greening the campus.
- Greening the curriculum and training.
- Greening the community and workplace.
- Greening research.
- Greening the institutional culture.

So, next step is that; next step is that under this first step the next is making an institutional alignment and assessment, the local employment needs. So, suppose when we are

introducing, going to introduce or establish a industry in a particular local area particular reason particular context.

So, here we have to first of all assess the manpower the people there who are residing in and around that location and what are their needs, what are their skills, what are their the resources available in that area, then what are the skills that, what are their competencies similarly all these things first thing is we need to assess.

We need to assess the local people the local employment needs the again what are the resources available and what are the skills and competencies or the advantages or can you can say this kind of some traditional concept, traditional knowledge, competencies are already available we have to assess it.

And now after that we have to identify the local peoples need assessment. So, accordingly we can create the job. So, create the local employment needs. What sort of people learn employment or the jobs or the works actually their local people they need. Then at the same time we have to look into the policies and regulations as the driver or the hindrance because whatever we want to introduce or create we have to create it within the framework of policies and the regulations.

So, again whatever again we have to analyze what are the national agenda whether it comes under the any on any of the national schemes and the policy framework etcetera. Then again international commitments; so, make an international commitments like as because we are the we are working on the global context also. So, being the both the local needs as well the global commitments, global opportunities, global responsibilities both the things should align properly.

So, even so whenever we are going to start in any particular entrepreneurs, a particular jobs or the industry or any entrepreneurship and entrepreneur, so, we have to look into these things. First thing is the local requirements, local resources available and whether it falls in the policy framework and rules regulations under the rules and regulations or not or is there any hindrance and impediment any hurdle is there.



Then what; what is the what is the policy of in the national agenda or national priorities and yes at the same time we have to align with the international commitment. So, this is the steps are to be taken care of so in the first days. Then adopting the whole institution approach; the whole institution approach is that taking to the totality; that means, the holistic development, the harmonious development in all aspects.

It is not just about creating the new jobs or manufacturing or product or any or just training the human resource is not just one aspect, but focusing on all the aspects that is the adapting a whole institution approach. So, that is to integrate in order to integrate the sustainability. So, we have to focus on these schemes. Like first thing is the green campus; greening the campus.

So, how to make this ecosystem the environment as green as possible with more plantation more than more that means, waste management policies etcetera, greening the campus first. Then greening the curriculum and training thereafter how to design the curriculum.

So, which will be with which will be more in the on the software basis on the that means, which would create minimum carbon footprint and also online training all these kinds of online curriculums, courses all kinds of things, e-courses, online courses, how can we enrich our audience enrich our people with immense literature, immense training material, immense tools, etcetera but with minimum carbon footprint that is the greening the curriculum and training pose.

Then greening the community and the workplace and so far as the community local community who are directly related to this the community, the workplace that the environment, surroundings all these things should be taken care of. Now, here I can say put the one example that is for example, the Tata companies, Tata Steel be Tata Steel, Tata Motors whatever.

So, whenever they are establishing any kind of industrial setup, manufacturing sector or whatever, so, not they not just not only develop their own workplace, own infrastructure, own manpower, own you can say amenities and facilities, but at the same time they also develop the township also.

So, that is that developing the town thing with other kinds of facilities like health facilities, education facilities, even shopping facilities, even you know exercise and you can say gym cannot exercise facilities, entertainment thing. So, they look into the all round aspects of the human development.

So, that is the greening the community in the workplace is not just focusing on the workplace developing our workplace and the area that we are working within, but outside this workplace that is the total township total village or total area that we will cover.

Again, greening the research again simultaneously we have to update ourself with the research and development from time to time because you know research is an ongoing process, innovative process, innovative approach which always enrich and boost our present practices, present competencies, present technology.

So, the technological development and then the you know even the human resource also the human needs also keeps on changing. So, to update ourself research is very much important. So, greening the research how to conduct the research simultaneously in a more eco-friendly manner. So, that is the greening the research that is up to update ourselves with the more and more innovative research, how these research can also come up with the new ideas, new skills, new platforms, new ideas to be more innovative.

But again the focus again on the sustainability approach, sustainable development, sustainability approach, sustainable sustainability implications and making it more greener in the terms of minimum carbon footprint eco-friendly. So, how to develop the community and economy in the in a very eco-friendly manner, that is by adopting a whole school approach.

So, automatically we can build up in green institutional culture. A work culture it is not just about work culture, but it is also institutional culture environmental; so that means, equal distribution, equal focus, equal importance to economy society as well as the environment. So, that is the.

So, it should be built in within our consciousness in its as we have already discussed that is the paradigm shift. It is a shift in our thought process, it is a shift in our outlook, it is a shift in our effective domain that how do we feel about this, how to it not just taking care of our own

residence own home, but taking care of our planet. Taking it, but at the same time we are also going to proceed and progress for the 21st century jobs and employment.

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• **1.4 ENGAGING TEAMS**

- Analysis of stakeholders.
- Stakeholders as learning partners.
- Articulated roles and contributions of each stakeholder

**FIVE APPROACHES TO SUSTAINABILITY IN TVET INSTITUTIONS**

- 1 GREENING THE CAMPUS**  
Aims to promote an integrated management of the campus to strengthen operational sustainability mechanisms. It is designed to see sustainability principles are applied, resources are deployed, and financial returns and benefits for the institution are established.
- 2 GREENING THE CURRICULUM AND TRAINING**  
Aims to integrate sustainability into the existing curriculum and training. It seeks to embed sustainability-related content and green skills in the curriculum and training. In the process, teachers and trainers are progressively equipped with competencies they need to deliver relevant content across disciplines or in a specific area of competence.
- 3 GREENING RESEARCH**  
Aims to promote and apply sustainability in research philosophies, content, ethics and standards. It is in this approach that institutions can engage in collecting and disseminating data that are useful for the learning community. Actors in the institution seek to investigate applications of sustainability practices and develop solutions together.
- 4 GREENING THE COMMUNITY AND WORKPLACE**  
Aims to co-develop and implement with partners and communities the institution's sustainability plans and programmes in which shared goals can be pursued, and sustainable practices in the workplace and sustainable lifestyles become the norm.
- 5 GREENING INSTITUTIONAL CULTURE**  
Aims to embed sustainability into all aspects of the institution. Greening culture is where sustainable development could be an integral part of all the strategies and plans of an institution, the benefits are demonstrated by the stakeholders, and are evident in a range of institutional outcomes.

Second; so, now after all these kinds of planning then comes our engaging the teams, how can we engage our manpower or people. So, engaging teams like, analysis of the stakeholder. Again, whenever we are establishing a factory or industry or entrepreneur and an entrepreneur model.

So, here again we have to analyze the stakeholders. Stakeholders like in the classroom situation when we talk about the learners we have to assess the learners needs, same similarly in the in a business situation, in the industrial situation we have to analyze the stakeholders. So, analysis of the stakeholders who are directly involved who are indirectly involved. So, direct stakeholders who are directly the beneficiaries of the product or the manufacturing or the service processes.

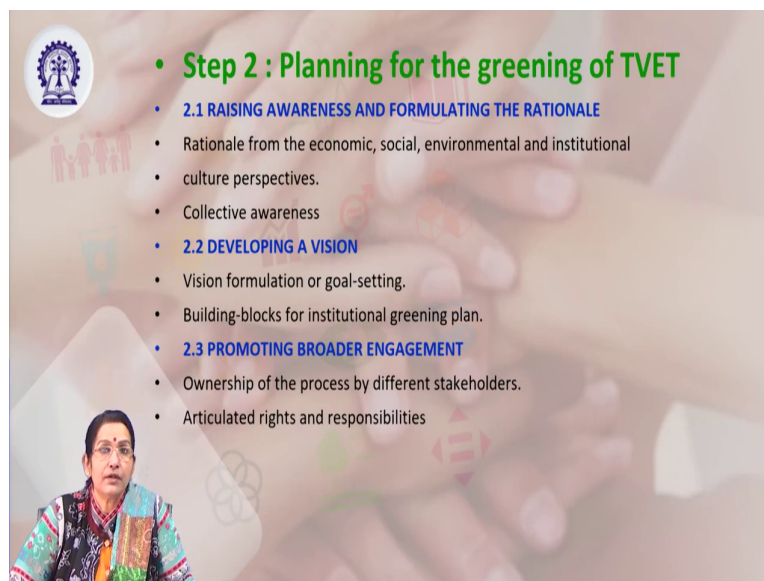
So, analysis of this stakeholder who are the direct stakeholders, who are the indirect stakeholders, who are the customers, who are the consumers, who are the suppliers, who are the investors. So, all the stakeholders can be a partners in our learning process. All the stakeholders who are direct indirect are the partner learning partners. So, we have to articulate the roles and contributions of each stakeholder.

Here we have to spell out, we have to explain that is the all the roles and responsibilities of each and every category of the stakeholder. So, these are the what are the thing these five approaches for the sustainability in the institution that is the greening the campus, greening the curriculum and training; that we have already discussed, then greening the research, greening the community and workplace, greening the institutional culture the that just we have this discussed.

So, these are how to explain it elaborated because you know we have to formally train all our stakeholders. It is not just about how just about the discussion only, but in the bulletin only in the meetings only, but we have to create that awareness with more publicity with more advocacy in through different media and different medium platforms.

So, then so, green research, greening the community workplace, greening the institutional culture all these things are we have already discussed.

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The slide features a circular logo in the top left corner. The main title is 'Step 2 : Planning for the greening of TVET'. Below it, there are three sub-sections, each with a blue bullet point:

- **2.1 RAISING AWARENESS AND FORMULATING THE RATIONALE**
  - Rationale from the economic, social, environmental and institutional culture perspectives.
  - Collective awareness
- **2.2 DEVELOPING A VISION**
  - Vision formulation or goal-setting.
  - Building-blocks for institutional greening plan.
- **2.3 PROMOTING BROADER ENGAGEMENT**
  - Ownership of the process by different stakeholders.
  - Articulated rights and responsibilities

In the bottom left corner, there is a small inset photograph of a woman with glasses, wearing a colorful patterned shawl, looking towards the camera.

Now, coming to the next step that is step 2 that is planning for the green greening of the TVET, planning for the greening the TVET how to make at the technical and vocational education actually that means, actually green segments now initially it was the assessment need assessment and etcetera. Now, it is the planning for the green. So, raising the awareness and formulating the rationale.

So, again when we have we will we are going to put it in the formal platform formal learning platform then we have to raise that awareness and developing a kind of logic rational morality, kind of; rational from the economic, social and environmental institutional perspectives. So, why do we want to introduce these things?

We have to price each and every stakeholder, we have to educate each and every category of stakeholder regarding this how it is directly and indirectly affecting our economy, our social, our environmental, life, situations, institutions and cultural perspective also, how it affects all these domains as well as it has the that it is collected to the globe it is a it is a collective awareness regarding the global impact its impact on global impact of this kind of schemes.

So, for example, so, for example, introducing the manufacturing these new cars, new models, new vehicles, automobiles from every day, it is in it is again in the manufacturing sector is an it is an innovative. Every model is new model new competition is coming up.

Yes, this taking up this manufacturing sector at the vehicle or the automobile sector into the height of the it is production it is ok, but again how to make it eco-friendly how to make it sustainable. So, here so, that is a you might have observed in the production and manufacturing of automobile sector also. There is a competition that with that makes with a renewable energy source like with minimum carbon footprints, with minimum fuel consumption, with minimum carbon emission.

So, how these vehicles automatic vehicles, now the hydrogen vehicles or you know electric vehicles and so, many competitions are coming. So, again it is also an innovative way of making our manufacturing and the service sector more greener. So, here first thing is that we have to create that awareness by formulating a rationale, a logic, an ethics of values.

Like for example, how does it directly indirectly affect to our environment, it has our society, community, our economy, our institution and as well as the global culture as well. Then thereafter to develop a vision: a vision of plan, vision formulating the goal setting. Like for example, for every entrepreneurship, for every venture, for every startup we have to have a kind of vision, mission, goals etcetera.

So, we have to define it clearly. So, developing a plan for the vision, formulating the goal setting, building blocks for the institutional green plan. Like the five object five as specific aspects we have talked about that is the green campus, green works pro workplace all kinds of. Similarly, we have to formulate different plans like what could be the vision, how this vision and mission can be translated into the goals and objectives.

And in order to achieve each and every goal how can we build up the blocks and build up the blocks units for institutional greening plan, then promote the broader engagement of the stakeholders; how directly or indirectly they can be engaged. So, ownership of the process, who is going to take this what type of ownership in this process in this venture.

So, ownership of the processes by different stakeholder, what would be the ownership that means, the of the process by different stakeholder, articulated rights and responsibilities. So, here now we have to plan out like who are the direct stakeholder, what would be their roles and responsibilities and who are the indirect stakeholders, what would be their roles and responsibilities that has to be clear if clarified properly.

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- **Step 2 : Planning for the greening of TVET**
- **2.4 ASSESSING CURRENT REALITIES**
  - Large-scale assessment of current situation.
  - Foundation for knowing the priorities, resources and needs
- **2.5 DEVELOPING AN INSTITUTIONAL GREENING PLAN OF ACTION**
  - Greening priorities.
  - IGP with a clear goal.
  - Timetable for action

Advisory committee

Then next comes assessing the current realities. What is the actually present scenario, that is what is the status quo right now? Assessing the current realities that large scale assessment of the current situation that you know initial stage we have to make a survey of this; what is the

current situation, what are the resources available, what are the people's needs, what are their what are the constraints, what are the what are the shortcomings, what are the advantages of that locality people and systems, what are the more requirements and the all kinds of things that is to assess the current realities in terms of large scale assessment.

So, foundations for the knowing the priorities, resources and needs, here after the large scale assessment or the survey initial survey we can categorize the what are the priorities of this area, what are the resources available and what are the shortage or shortcomings or the constraints on which the needs can be the needs of the people needs can be developed the need assessment can be made.

So, thereafter the developing and institutional greening plan of action. Thereafter, the developing an institutional greening plan of action, that is the greening priorities. How at every step how at every step can we emphasize on the green greening that is eco-friendly approach.

Whatever we do even if it is a it is a conducting a meeting, conducting a get together or creating the product or you know selling the product all whatever may be, how the green greening approach green approach eco-friendly approach can be given as the priority. So, so here we can also we can also clear that international green policy with a clear goal.

So, in here also we can apply. So, timetable for action, timetable for action then you know advisory committee, then monitoring and evaluation committee who are going to who are going to apply it, who are going to monitor it, evaluate it, and introduce new tools and assessment tools and techniques to map it, to measure it, to evaluate from time to time.

So, in this way, so, we have to develop an institutional greening plan and plan of action which are going to be executed from the very beginning with clear roles and responsibility with clear specification, with clear objective, action plans and clear assessment and evaluation pattern also. Because from time to time whatever we introduce from time to time we have to monitor it, evaluate it and assess it truly.

So, when we talk about the introducing the green approach, green job, green TVET, etcetera; then again and to what extent it boost ESD or sustainability then we have to have suitable

tools and techniques and to map it to measure it assess it because you know that means, all definitely we have to analyze it on the basis of its impact both qualitative benefit with quantitative benefit.

So, how to measure, how to assess these quantitative and qualitative benefits by introducing a green plan of action or green curriculum or green policy, that we have to definitely analyze and monitor. On the basis of that on the basis of that feedback and assessment result then we then only we can proceed further.

So, now, for this time for the time being, now, we stop here. In the next class we will continue with the following steps.

Thank you very much.