



Integrating education with consumer behaviour relevant to energy efficiency and climate change at the Universities of Russia, Sri Lanka and Bangladesh (BECK)

Partner report on the current state of higher education and its relationship with consumers' behaviour on energy efficiency and climate change

> **Report prepared by:** UNIVERSITY OF MORATUWA –SRI LANKA



## CONTENT

С	ON	TENT	2
1	I	NTRODUCTION	3
2	Ν	AETHODOLOGY	4
3	C	CONTEXT	5
	3.1	SOCIO-POLITICAL AND CULTURAL CONTEXT	5
	3.2	STATUS OF EDUCATION	6
	3.3	FUNDING	6
	3.4	EDUCATIONAL NEEDS	6
	3.5	EDUCATIONAL GAPS	7
4 C	P ONS	OLICIES RELEVANT TO HIGHER EDUCATION, AND THEIR RELATIONSHIP WITS SUMER BEHAVIOUR ON ENERGY EFFICIENCY AND CLIMATE CHANGE	ГН 9
	4.1	POLICY AND PLANNING	9
	4.2	GAPS IN POLICY AND PLANNING	10
5	C	CAPACITY TYPES	11
	5.1	INSTITUTIONAL CAPACITIES	11
	5.2	ORGANISATIONAL CAPACITIES	17
	5.3	INDIVIDUAL CAPACITIES: STAFF SKILLS	18
	5.4	ACCESS TO INFORMATION, KNOWLEDGE AND TECHNOLOGY	20



## **1** INTRODUCTION

The purpose of this series of country reports is to obtain a general philosophical, pedagogical and practical understanding on the status of higher education and its impact on consumer behaviour relevant to energy efficiency and climate change in BECK partner and European partner countries. It will also provide a basis for understanding and evaluating the capabilities of partner institutions on integrated education for energy efficiency and climate change. The results of these reports will inform a capacity building framework, which will form the basis for the development of modules on energy efficiency and climate change during the BECK project.

The reporting approach is based on the Capacity Needs Assessment Methodology (CAPNAM) proposed by the United Nations (2013).

The report includes chapters on the following:

Methodology:

This section describes the methodological approach used to collect and analyse the data that informs the findings presented in this report.

Context:

Provides an overview of the regulatory, socio-political, and cultural factors that shape policy on the consumer behaviour relevant to energy efficiency and climate change in the country in general, and education in particular.

- Scope and coverage of education policies on consumer behaviour relevant to energy efficiency and climate change by the Higher Education Institution (HEI). Examines the illustrative policy and planning issues relevant to integrated education on consumer behaviour relevant to energy efficiency and climate change.
- Description of capacity types: Evaluates the existing state of capacities of HEI in the field of integrated education on consumer behaviour relevant to energy efficiency and climate change. As defined by the CAPNAM analytical framework, the four types of categories are institutional, organisational, individual, and the knowledge base.

The content of this report is related to the BECK Project and reflects only the author's view. The National Agency and the Commission are not responsible for any use that may be made of the information it contains.



## 2 METHODOLOGY

Please describe the methodological approach used to collect and analyse the data that informs the findings presented in this report. For example, this may include focus groups, interviews, document reviews and literature reviews.

Annual Report of the year 2017 of University of Moratuwa was used to find out total students, staffs and study programmes.

An online questionnaire was distributed among 415 faculty members of University of Moratuwa, Sri Lanka which, include 100 academic staff of Faculty of Architecture, 15 academic staff of Faculty of Business, 270 academic staff of Faculty of Engineering and 30 academic staff of Faculty of Information Technology.

Further, the research will be extended to study the curriculum of all faculties while conducting structured interviews to find out how academic staff has integrated consumer behaviour relevant to energy efficiency and climate change in their modules.

In addition, a thorough literature survey will be conducted to analyse the current policies relating to energy efficiency and climate change in Sri Lankan context.



## **3 CONTEXT**

This section provides an overview of the regulatory, socio-political, and cultural factors that shape policy on the consumer behaviour relevant to energy efficiency and climate change in the country in general, and the education in particular. Please answer the following questions.

## 3.1 SOCIO-POLITICAL AND CULTURAL CONTEXT

What are the socio-political and cultural contexts providing the framework for educational policy planning in the field of consumer behaviour relevant to energy efficiency and climate change in the country? Are there any regulations, plans, etc.?

Socioeconomic development is to improve peoples' quality of life dependent on access to basic needs such as; food, safe drinking water, shelter, clothing, education and health care. Sri Lanka is a Lower Middle-Income country with a GDP per capita of USD 4,073 (2017) and a total population of 21.4 million people. An island nation of 66,000 square miles, Sri Lanka is one of the most densely populated countries in the world. The main ethnic groups include the Sinhalese, Sri Lankan Tamils, Indian Tamils, Moors or Muslims, Burghers and Malays. After 30 years of civil war that ended in 2009, Sri Lankan economy grew at an average 5.8% during the period of 2010-2017.

The overall annual demand for electricity is expected to increase by around 4-6 %, a number constrained by high prices In this context, it is clear that a strategic balance between the national energy demand and supply has to be maintained with a long term perspective, in order to support a steady economic growth in Sri Lanka. With one of Sri Lankan's primary resources being her human capital, this sector development plan for a knowledge-based economy has primarily developed to meet energy demand through renewable and other indigenous energy resources, and their potentials towards a "green" economy, energy conservation measures for its sustainability, measures for energy security, financially and economically justifiable pricing policies for electricity and petroleum products, research and development initiatives, and importantly management and good governance practices for the sector. These initiatives will ensure that consumers and businesses are not unduly vulnerable to external market factors and that the economy can benefit from a secure and affordable energy supply.

Sri Lanka will be elevated to a regional hub by increasing its refinery capacity and utilizing the gas and condensate discoveries in the Mannar basin to create and meet domestic demand as well as to supply international oil and gas markets. Development of a natural gas processing plant in Norochcholai and an oil storage and trading centre using the Trincomalee tank farm are part of this strategy. Large scale deployment of renewable energy will further increase the resilience of Sri Lankan energy supply, with a large scale wind farm in Mannar and a widespread network of fuelwood exchanges being some planned Green initiatives.

Over the past decades, economic transformation and poverty have accelerated the rate of environmental degradation. Recognizing the increasing problems associated with deforestation, biodiversity loss, climate change, pollution chemicals, health hazards, floods and droughts, the Government adopted a National Environment Act in 1982 and established a Central Environment Authority and a Ministry of Environment. In addition the best



practices for energy efficient building was introduced by Sri Lanka Sustainable Energy Authority.

## 3.2 STATUS OF EDUCATION

## What is the current state in education on consumer behaviour relevant to energy efficiency and climate change? Is it important in your country? Please specify.

Currently, there is no proper plan to integrate education on consumer behaviour relevant to energy efficiency and climate change. However, it has been identified there is such need for the countrys' education. Ministry of Power and Energy has created a 10-year plan called Sri Lanka Energy Sector Development Plan for a Knowledge-based Economy (2015-2025). Further, under the Consultative Group for International Agricultural Research (CGIAR) on Climate Change, Agriculture and Food Security (CCAFS), the International Water Management Institute (IWMI) has influenced the climate change policy in Sri Lanka and raised awareness about the implications of climate change for the country and farmers.

#### 3.3 FUNDING

# Is funding sufficient for integrated education on consumer behaviour relevant to energy efficiency and climate change at your country? Please specify.

NO.

Sri Lanka is an Island with approximately 20.9 million of population and scientific evidence is creating a consensus that economic growth has placed an unsustainable burden on the physical environment in Sri Lankan context. Our aim here is to integrate education on consumer behaviour relevant to energy efficiency and climate change in a very practical manner. Thus, we were selected students in tertiary education level (Young crowd) as our prime focus here. Because we have to take long-term effective actions to mitigate these issues as an individual, group and as a Nation. Thus a proper framework was worked out as follows,

- Understanding consumer behaviour
- Collecting evidence for what works
- Designing high impact education programmes
- Targeting young people effectively (Tertiary education)
- Making a new focus on evolution and achieving realistic goals

This need to be continuous for a tangible period. Hence this need to be provoke for few more developments. Therefore, we need to find more funding sources.

#### **3.4 EDUCATIONAL NEEDS**

# What are the needs in integrated education on consumer behaviour relevant to energy efficiency and climate change (please list up to 5 major needs at country level):

Sri Lanka is county within the tropical climatic belt, however it has been experiencing extreme weather conditions for the past 10 years, with flood and drought alternately affecting farmers in particular and the population at large. In 2016, Flood affected 24 out of 25 districts in the country, causing 210 deaths, damage to almost 60,000 houses and displacing 500,000 people. While floods affected populations across the country, the damage was concentrated in the highly urbanized and industrialized Western Province of Sri



Lanka and estimated at around \$700 million. Only three months later, the country was in the grip of the worst agricultural drought in two decades with resultant crop failure. The recent floods and landslides very early in the monsoon season are linked to soil erosion, deforestation and increased rains and have affected 630,000 people across 15 districts, displaced more than 100,000 people and killed over 200. Sri Lanka needs to pay urgent attention to the environmental risks from the long-term impacts of climate change. The total number of people affected by floods from 2005 to 2014 was more than 4.6 million.

Unfortunately, Sri Lanka lost 50 percent of its forest cover within 50 years. Currently there are several threats to the established protected areas, including increasing population density, poverty incidence, dependence on subsistence agriculture, habitat degradation, over-exploitation of biological resources and spread of alien invasive species. Some of the forest loss is attributed to the redefinition of district boundaries, land clearing for irrigation schemes through the Mahaweli Development Project, and hydro-electric generation.

Therefore, we need to aware future generation on the above stressing factors by giving a quality education on focusing consumer behaviour relevant to energy efficiency and climate change while moving from teacher-centred education to student-centred education.

## 3.5 EDUCATIONAL GAPS

What are the gaps in integrated education on consumer behaviour relevant to energy efficiency and climate change (please list up to 5 major gaps at country level):

One of the most significant issues which Sri Lanka faces is the uneven quality of and access to education, despite its commitment to the universal provision of education.

Despite high rates of enrolment at the primary level, the education system is unable to retain youth at higher levels. 37% of youth do not proceed beyond the upper secondary level, even though education is highly valued in Sri Lankan society. 23% of respondents of the National Youth Survey 2013 stated they dropped out of school as they did not find it useful and only 2% reported being enrolled in higher education.

Among public and private technical, vocational and training institutions, the quality is not high enough to satisfy the demands of the domestic industry or the changing economic environment. Brain drain is also a problem, with Engineers and other professionals who are valued in industrialized nations migrating to those countries. Therefore, Public awareness on climate change and energy efficiency is very low.

Further, most of the systems still rely on traditional systems since there is low international exposure. Moreover, the availability of resources is low compared to other countries. However, as described in the below diagram it has identified major energy sectors challenges in Sri Lanka. However, our country has not identified yet, 'education' is an important tool to overcome those factors and to upgrade the current education system, which integrates with consumer behaviour relevant to energy efficiency and climate change.







## 4 POLICIES RELEVANT TO HIGHER EDUCATION, AND THEIR RELATIONSHIP WITH CONSUMER BEHAVIOUR ON ENERGY EFFICIENCY AND CLIMATE CHANGE

This section examines the illustrative policy and planning issues relevant to integrated education on consumer behaviour relevant to energy efficiency and climate change. Please answer following questions.

## 4.1 POLICY AND PLANNING

Please describe policy and planning issues currently being addressed by the HEI in the field of integrated education on consumer behaviour relevant to energy efficiency and climate change.

With the rapid economic transformation from an agriculture-based rural economy to a more commercial economy, successive governments have prioritized investments in infrastructure (ex. construction of dams and irrigation) and with the end of the civil conflict, investments in infrastructure are expected to triple with the expansion of the road network and export-led productive sectors. The trade-offs are likely to be negative impacts on the environment if mitigation plans are not put in place. Over the years, Sri Lanka has also become more vulnerable to climatic changes and development actions need to focus on building resilience.

Sri Lanka's economy is highly reliant on climate-sensitive sectors such as agricultural, forestry and energy production. In the energy, sector policies have been developed to support increased energy efficiency and to reduce associated environmental pollution. As an example "Code of practice for energy efficient buildings in Sri Lanka" was published on this date of 30th June 2009 under clause 36 (g) of Sustainable Energy Authority Act, in Sri Lanka. However, these codes are not focusing on consumer behaviour or not integrated with the current curricula in HEI. Fortunately, there are few courses teaching in relating to sustainability and climate-sensitive design and energy efficient strategies to the students who are specifically studying in Engineering, Architecture and Green technologies. However, those subjects are not integrated into the consumer behaviour relevant to energy efficiency and climate change in a holistic manner.

Further, Vocational stream was introduced letting those who dropped-out from the schools after Ordinary Level exams. This is not directly linked to the said topic, however this can be considered as a positive move towards integrating education on consumer behavior. The government has identified the need of international benchmarking of degrees and there have given budget allocation for uplifting infrastructure facilities as well as to improve their curriculums.



## 4.2 GAPS IN POLICY AND PLANNING

Please describe other, if any, policy issues that are not currently being handled by the HEI but should be considered.

N.B. The responses to these questions do NOT require describing each policy and planning issue but only the identification of the type of issues being addressed and those not being addressed. The questions are only meant to understand the scope of coverage of important issues by the HEI.

- E-based learning
- Smart classroom
- Vocational education
- Standardize private education
- International recognition for HEI
- Research base HE without focusing only on teaching
- Selection of students to HE

• The state universities of the county don't have way of enrolling student's directly. Universities get students through UGC which is a central body.

• Energy efficiency is not a priority area in the current higher education system.

• Higher education system consist of six streams namely science, mathematics, vocational, technology which doesn't have much interactions each other. Even though universities are looking for international bench marking, there no/little prevision given for knowledge sharing/ content sharing leading to credit transfer.



## 5 CAPACITY TYPES

This section aims at assessment of the existing state of capacities in the HEI for integrated education on consumer behaviour relevant to energy efficiency and climate change. As defined by the CAPNAM analytical framework, the four types of categories are institutional, organizational, individual, and the knowledge base.

### 5.1 INSTITUTIONAL CAPACITIES

#### This part describes the institutional capacities at HEI level. Please answer following questions.

### **1.** Please provide brief presentation of the HEI.

University of Moratuwa was first started as a Technical school in 1893 and then that was converted to a fully-fledged university in late 1978 under the Universities Act No.16 of 1978 and operates under the general direction of the University Grants Commission (UGC). It's an independent state university located at Katubedda, Moratuwa overlooking the picturesque Bolgoda Lake and about 20km away from the capital of Sri Lanka. It is famous as a technical university however, with the recent addition, there are 5 faculties. There are about 450 academic staff and about 650 non-academic staff and the annual intake is about 1500 undergraduates.

The Faculty of Engineering which is the project partner is the first faculty there. Among all five faculties, Faculty of Engineering holds about 70% of the University and it has an annual intake of around 900 students. It consists of 12 independent departments and out of that the biggest department is Civil Engineering.

The main aim of the University is to produce a state of the art undergraduates, however, there are many postgraduate courses as well as produced a significant number of postgraduates per year.

# 2. Please describe general model of studies according to different levels (bachelor, master, PhD).

The following figure shows the current general education system in Sri Lanka. It shows only the public education system. Due to the high demand for government school, some of the students enter to either a private school or an international school. They teach the London Edexcel or Cambridge curriculum and prepare students for London O/L and A/L examinations. Though they passed in good grades these students do not have an opportunity to apply for state universities in Sri Lanka. Either they have to go abroad and study in a foreign university or they can enter a private university in Sri Lanka if they wish to obtain a university education. These may be public universities, public and private degree-granting institutions which award their own degrees or degrees from foreign universities.

In Sri Lanka, there are two types of educational systems and university-level education can be obtained by either public (state) or private. There are 17 state universities and out of that six universities which have an intake of students for engineering education on passing their advanced level (A/L) examination and they provide free education for all Sri Lankan students. Students who scored high marks in their A/L are eligible to study for BSC (Honours) in Engineering in all part of the country. The marks obtained by students in different subjects are standardized using a statistical formula and converted to "Z" scores for ranking. However, in order to ensure equity for children coming from disadvantaged areas, a district quota is allocated on the basis of the population in the district and a percentage is reserved for the most backwards districts. As the number of places available in the universities is much



less than the number of students who qualify there is intense competition to enter the universities

Therefore, those who are not admitted to the government university can pay for enrolment in degree programmes at private institutions where they wish to study. There are eight private institutes approved by University Grant Commission (UGC) which offer engineering degrees in Sri Lanka.

At universities, students first complete the bachelor's degree, after which they may pursue a higher master's degree. The target time for completing a master's degree is generally five years. Universities also arrange separate master's degree programmes with separate student selections, for which the entry requirement is a bachelor's level degree. At the universities, students can also study for scientific or artistic postgraduate degrees, which are the licentiate and the doctorate degrees. It takes approximately 3 to 4 years of full-time study to complete. One of the basic principles of education is that all people must have equal access to high-quality education and training. Education is free at all levels from pre-primary to higher education (degree education).





## 3. Please provide key facts and figures about the HEI:

## 3.1. Number of students:

Faculty 🔽	course 🔽	Male 🔽	Femal 🔽	Total 💌
	Architecture	186	99	285
	Design	93	102	195
	Facilities Managemet	91	102	193
Architecture	Landscape Architecture	90	87	177
	Quantitiy Surveying	370	132	502
	Town & Country Planning	55	142	197
	Total	885	664	1549
	Engineering	2580	778	3282
Engineering	Fashion Design	29	155	184
Engineering	T&LM	154	71	231
	Total	2763	1004	3697
	іт	438	323	761
IT	ITM	83	303	386
	Total	521	626	1147
Business	BS	84	115	199

Postgraduate Student Pop	ulation 2018							
Faculty Programme of Study		N (January	New Entrants (January – December 2018)			Student Enrolment (total no. of registered students) (as at 31 <sup>st</sup> December 2018)		
		Male	Female	Total	Male	Female	Total	
	PG Taught Courses	251	99	350	1716	469	2185	
	MSc Research	42	16	58	134	51	185	
	Mphil	6	9	15	76	45	121	
Engineering	PhD (Research)	11	3	14	49	26	75	
	PG Taught Courses	25	16	41	171	56	227	
	MSc Research	0	1	1	0	2	2	
	Mphil	1	1	2	4	2	6	
IT	PhD (Research)	0	0	0	0	0	0	
	PG Taught Courses	98	64	162	395	173	568	
	MSc Research	0	6	6	1	10	11	
	Mphil	1	1	2	2	7	9	
Architecture	PhD (Research)	2	1	3	7	5	12	
	PG Taught Courses	6	26	32	143	57	200	
	MSc Research	0	0	0	0	0	0	
	Mphil	0	0	0	0	0	0	
Business	PhD (Research)	1	0	1	1	0	1	



### **3.2.** Number of academic staff:

	Total Students*		Total Academic Staff					
Faculty/ Division/ Centre	2016 2017	2017	Permane	nent	Contract			
	2010	2017	2016	2017	2016	2017		
Faculty of Architecture	1950	2324	78	78	16	22		
Faculty of Business	-	98		10		5		
Faculty of Engineering	4663	5601	243	226	36	43		
Faculty of Information Technology	1422	1719	28	30	1	1		
Faculty of Graduate Studies	-	-				1		
Divisions and Centres	-	-	7	7				
Grand Total	8035	9742	356	351	53	72		

### **3.3. Student/Academic staff ratio:**

Faculty/ Division/ Centre	student/academi	c staff ratio
	2016	2017
Faculty of Architecture	21	23
Faculty of Business		7
Faculty of Engineering	17	21
Faculty of Information Technology	49	55
Grand Total	20	23

### 3.4. Number of Faculties (please specify): 5

- Faculty of Architecture
- Faculty of Business
- Faculty of Engineering
- Faculty of Information Technology
- Faculty of Graduate Studies



## **3.5.** Number of graduates:

## Bachelors Degrees (Undergraduate)

Faculty	Number Graduated			
	2016	2017		
Faculty of Architecture	265	376		
Faculty of Business				
Faculty of Engineering	801	904		
Faculty of Information Technology	184	238		
Grand Total	1250	1518		

## Postgraduate Degree (by Course)

	Number of Students Completed					
Faculty		M.Eng./ BA	Postgraduate Diploma			
	2016	2017	2016	2017		
Faculty of Architecture	19	53	18	25		
Faculty of Engineering	22	38	11	5		
Faculty of Business	178	164	96	170		
Faculty of Information Technology	33	41	2	4		
Total		296	127	204		

## **Postgraduate Degrees (by Research)**

	Number of Students Graduated						
Faculty	M.Sc.	M.Phil.		PhD			
	2016	2017	2016	2017	2016	2017	
Faculty of Architecture	1		3	1	1	3	
Faculty of Engineering	14	7	5	4	2	3	
Faculty of Information Technology	-	-	-	1	-	-	
Faculty of Graduate Studies	-	10	-	-	-	-	
Total	19	17	8	6	3	6	



#### **3.6.Number of study programmes:**

Approximately 20

#### **3.7.** Number of international academic partners:

#### 3.8. International rankings of the HEI (if any):

- Webometrics ranking: world rank 2708, Sri Lanka 4th place
- QS Asia Ranking: 351-400, 3rd place in Sri Lanka

#### 4. Please describe main education and research areas of the HEI.

As a leading technical university of Sri Lanka, improving research and innovation capacity has been given high priority in the university development strategies. Few areas listed as below

Computer Engineering, Spatial Planning, Transportation, Photovoltaic, Low energy architecture, Sustainable material and design, Consumer behavior, Engineering Education, Robotics and Automation, Fashion and Textile, Advanced Materials in Textiles, Construction innovation management, Robotics, Biomedical Engineering, Transport Economics, Carbon constrained buildings and economies, Net zero emission building operations, Structural Engineering, Waste Management, Plastic recycling, Maritime transport, Marketing, Women entrepreneurs, Fashion, Finance, Marketing & Entrepreneurship, Computational Statistics and Signal Processing

# 5. Is there any strategic priorities given to integrated education on consumer behaviour relevant to energy efficiency and climate change at HEI level? Please specify.

#### NO

# 6. What are the needs at HEI in integrated education on consumer behaviour relevant to energy efficiency and climate change (please list up to five major needs):

Students should;

- Understand the necessity of environmental protection
- Learn to observe the changes taking place in the environment
- Evaluate the impacts of their own consumption
- Adapt their behaviour to support sustainable development.
- Familiar with the main aspects of the ecological, economic, social and cultural dimensions of sustainable development and be able and willing to act in support of sustainable development in their own lives.

# 7. What are the gaps at HEI in integrated education on consumer behaviour relevant to energy efficiency and climate change (please list up to five major gaps):

- The provision for credit transfer is not recognized as an option for students to go for different directions.
- HEIs have not given the opportunity to enroll students and hence, there is a very little chance of absorbing international students.
- Financial autonomy was not with mainly the state HEIs and that prevent setting their own development targets with the institute.
- Less provision is available for knowledge sharing by hiring good quality academics as the salaries are paid by the government.



### 5.2 ORGANISATIONAL CAPACITIES

This part describes the organisational capacities pertinent to integrated education on consumer behaviour relevant to energy efficiency and climate change at HEI. Please answer following questions.

**1.** Is integrated education on consumer behaviour relevant to energy efficiency and climate change sufficiently included in the curricula of HEI? Please specify according to different levels (bachelor, master, PhD):

1.1. Study programme level (Please list relevant study programmes):

- Civil Engineering
- Electrical Engineering
- Architecture
- Town and Country Planning

### **1.2.** Study subject level (Please list relevant study subjects/modules):

BSc and MSc modules

- Low Energy Architecture, Climate and Comfort, Net Zero Emission Buildings
- Optical and electronic device engineering
- Environmental Economics
- Solar Geometry and Heat Transfer
- Sustainable design and development
- Optical and electronic device engineering
- Global Fashion business
- Fashion and Textile
- Transport Economics
- Maritime Transport
- Marketing
- Marketing and Management

#### **1.3. Study topic level (Please list relevant study topics):**

- Solar cells
- Sustainable design and development (PhD)
- Environmentally sustainable design (PhD)
- Impact of climate change accross fashion supply chain and consumer knowledge, awareness, their purchase intention and preferences towards sustainable fashion
- Slow fashion, up-cycling garments, Natural dyes, Zero wastage garment manufacturing, zero wastage consumer life style, Eco fashion, Sustainable fashion and textiles
- Containment of externalities in Transport Sector
- Bunker fuel usage
- Green Marketing (PhD)



# 2. Is funding sufficient for integrated education on consumer behaviour relevant to energy efficiency and climate change at HEI? Please specify.

NO, the possibility of interacting and training the staff on new teaching and learning methods are lagging, mainly due to lack of funding available.

There are very less emphesis given on R&D on Education, teaching and learining as the main stream funding is very rearly available in these areas

3. What are the needs at HEI in integrated education on consumer behaviour relevant to energy efficiency and climate change related to organisation of study process (please list up to five major needs):

- Curriculum reforms to match the country need
- Availability of resources on Sinhala/Tamil
- Staff training
- Development of infrastructure facilities
- Funding on research and developments

6. Please list up to five major gaps in integrated education on consumer behaviour relevant to energy efficiency and climate change related to organisation of study process:

- Poor attention given on these area by the industry
- Demand for these knowledge areas in the job market
- Unavailability of state of the art knowledge in local context

#### 5.3 INDIVIDUAL CAPACITIES: STAFF SKILLS

This part describes the individual staff capacities pertinent to integrated education on consumer behaviour relevant to energy efficiency and climate change at HEI. Please answer following questions.

**1.** How many academic staff works at your unit? (Which implements the project):

Five

2. Is there sufficient number of teachers who specialise in integrated education on consumer behaviour relevant to energy efficiency and climate change? How many?

2.1. At university level: more than 10

2.2. At your unit/department: 03

3. Is there sufficient number of researchers who specialise in consumer behaviour relevant to energy efficiency and climate change? How many?

3.1. At university level: 04

**3.2. At your unit/department:** 02



### 4. Please describe the current state of the staff training in HEI. Is it sufficient?

No, the local training is again not enough.

No regular upgrading and monitoring process is available.

Since, the acknowledgement of staff is not based on their performance, less attention was given for their individual continuous professional development.

The international exposure on teacher training is vastly lagging and that prevent being in touch with state of the art knowledge.

# 5. Please describe the current state of the staff training on consumer behaviour relevant to energy efficiency and climate change. Is it sufficient?

No, there's no such training available locally.

# 6. Does the academic staff have flexibility in designing its own skill development plans or does it have to follow a centrally determined package?

Possible, however, less attention has paid since there is no recognition given for those.

### 7. Is there staff stability, or does it suffer from high turnover among such professionals?

It's now becoming stable as the staff remunerations have increased drastically within last 6-7 years.

# 8. What staff skills are required for integrated education on consumer behaviour relevant to energy efficiency and climate change (please list up to five major needs):

- Communication
- IT skill
- Communication
- Teamwork and Leadership
- Creativity and Problem Solving
- Information Usage and Management
- Adaptability and Flexibility

9. Please list up to five major gaps in integrated education on consumer behaviour relevant to energy efficiency and climate change related to staff skills:

- Gap in Infrastructure facilties
- Gaps in training and staff development
- Gaps in research and development in teaching and learning
- Gaps interaction between staff/student and the industry



## 5.4 Access to Information, Knowledge and Technology

Access to information, knowledge and technology is becoming increasingly critical for sustaining long-term growth and development of education. It relates to the capacity to enable academic staff and students to mobilize, access and use information and knowledge, including access to and effective use of internet. Please answer following questions.

**1.** Do students and teachers have access to the novel educational resources on consumer behaviour relevant to energy efficiency and climate change? Please specify: NO

1.1. Printed learning materials in national language: NO

1.2. Printed learning materials in English or other languages: NO

**1.3.** Online learning materials (open-source videos, simulators (calculators and software), case studies, text material) in national language: NO

**1.4.** Online learning materials (open-source videos, simulators (calculators and software), case studies, text material) in English or other language: Yes

2. Does HEI use MOODLE for educational purposes? Yes

**3.** Does HEI use computer-based intelligent systems, MOOCs, computer learning systems, big data mining for educational purposes? Please specify: No

4. Does HEI use software for integrated education on consumer behaviour relevant to energy efficiency and climate change? Please specify:

No

# 5. What Information/Knowledge/Technology is required for integrated education on consumer behaviour relevant to energy efficiency and climate change (please list up to five major needs):

- Knowledge on sustainable energy, renewable energy etc. Adopt more efficient technologies, Try to reduce energy losses, Knowledge about reducing climate polluting emissions. Invest more on renewable energy. Awareness programs should be arranged not only for the students but also for the public.
- Basic fundamentals of energy cycles and diverse effects
- Change people's attitude. For that, they need proper education regarding what is the impact of 'consumer behavior relevant to energy efficiency and climate change'. Initially, people should know how to save energy through their day-to-day life.
- Information about CURRENT situation of root cause problems for energy consumption and what measures are available to support to reduce climate change.
- Knowledge related to overall behavior
- Energy economics, Theory of utility and choice theory, welfare economics
- General awareness on energy efficient technologies and their impact on climate



6. Please list up to five major gaps in access to information, knowledge and technology pertinent to integrated education on consumer behaviour relevant to energy efficiency and climate change:

- Poor knowledge and skills in ICT
- Lack of fluency in English language
- Unequal access for Internet
- Poor bandwidth
- Inadequate training opportunities
- Lack of human resources
- Lack of technologies