

Science for sustainable living (The present status of science)

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Today science has conquered the world. Is this the truth? In February 2018 the 3M association investigated the current status of science in 14 countries, namely the developed countries- Canada, France, Germany, Japan, Singapore, Britain and United States and the developing countries- Brazil, China, Mexico, India, Poland, Saudi Arabia and South Africa. The outcome was that in general most of the developing and developed countries are satisfied with science and are enthusiastic about being

able to learn new things.

However, in addition to this positive attitude there are also the views which cause concern or worry among most adults who feel that science is having more influence on their children than on themselves. Accordingly they pay great effort to provide opportunities to their children to learn science. Given below are some of the views found through this investigation.

- Youth do not exhibit a positive attitude towards science. Also they do not appear to show

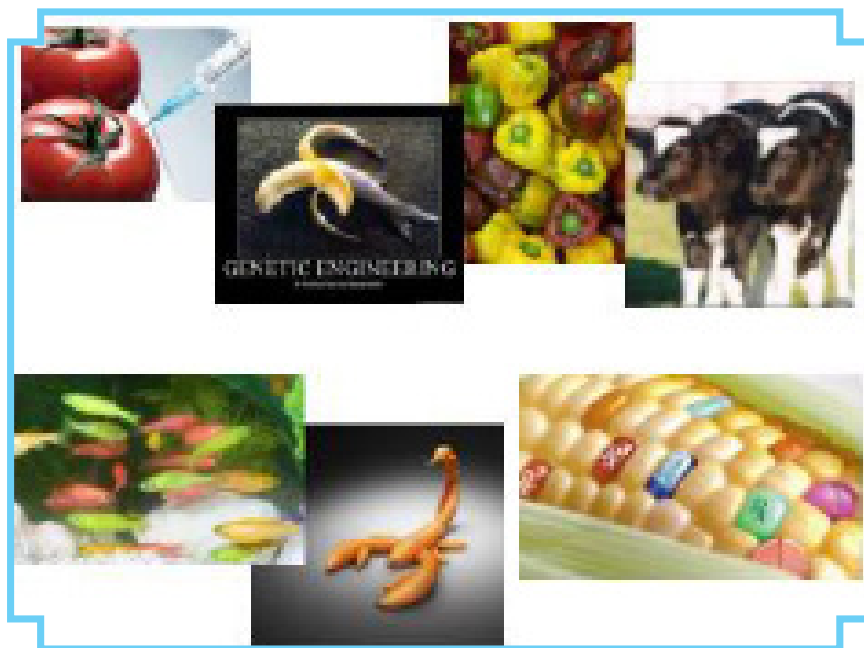
much confidence in what the scientists discover.

- Most view science as something that is invisible and have under estimated it.
- 90% view technology in a positive manner and believe that it is helpful for their living.
- 87% view the consequences of science as amazing.
- 86% know nothing about science.
- 90% view science as a tool for invention.
- 23% think that science and technology are entirely separated from each other.

Even though most considered science to be important they did not consider it to be of much importance to their daily living. The investigation also showed that most did not even think about science. The fact that most people look at science in a skeptical manner can be considered as a major problem. A large proportion of the young people possessing a skeptical view of science is a matter for concern.

With this background it is timely to determine how important science is for sustainable living. What is the attitude in Sri Lanka? The tendency of a decreased number of

	A - Non skeptical B - Skeptical	
	A	B
Technical development more important than development of science	23%	50%
If there was no science my daily life would not have changed much	16%	40%
If there was no science the society would not have changed much	16%	37%
Only those who are intelligent would be able to get jobs related to Science	14%	31%
Science is not an interesting subject	12%	41%
It is not important for adults/old people to have an understanding about science	10%	36%



sufficient to meet the demand of the increasing population other options to increase the yields were begun, such as indentifying the favourable characteristics of crops/animals and developing them further. In order to realize this objective simple hybridization was carried out to obtain living modified organisms (LMOs), and finally genetically modified organisms (GMOs) were produced. In all these the main impetus was provided by science. Even though some people object to the production of LMOs and GMOs these methods have produced crops with increased yield and crops which possess commercially friendly features (advantageous in the market). It may be possible to store them for a longer time (increased shelf life), with better appearance and taste. Of todays main crops about 95% of wheat and soya cultivated are genetically modified. Unfortunately these technologies have been the cause of economic “monopoly” of these crops. So those who possess the technology have secured the production of these crops. Even though it is possible to increase food production by this sort of agriculture a considerable amount of damage has also been caused due to these methods. The ‘poisoning of the globe’ predicted by Rachel Carson has

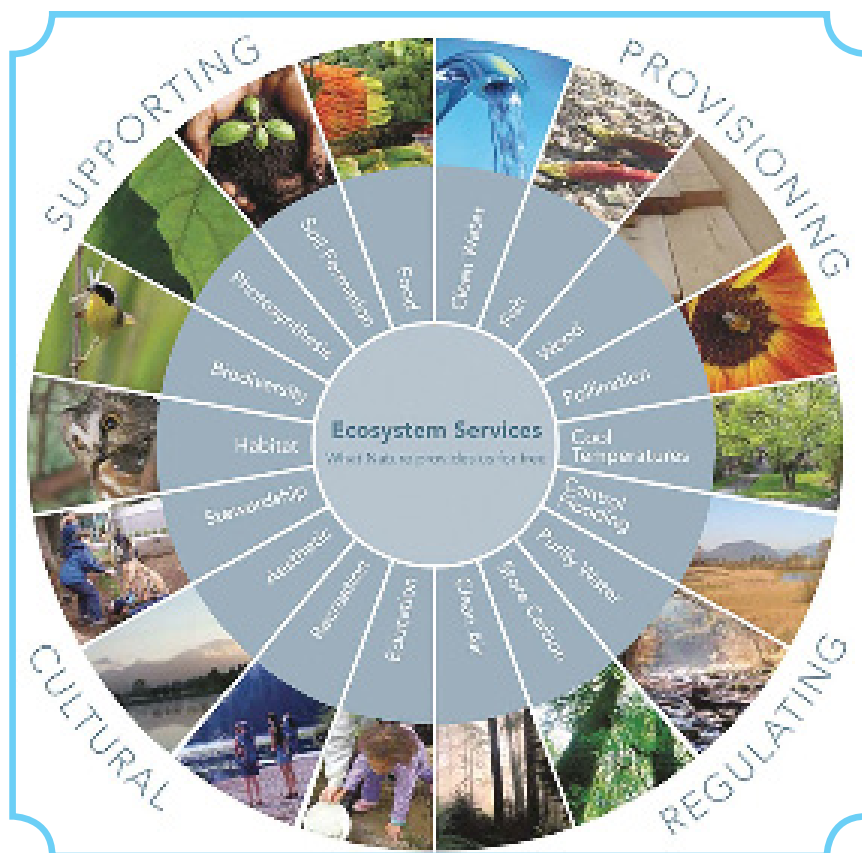
students wanting to study science in the recent past definitely points to a gloomy future. Scientific thinking is an essential background as a basis for a sustainable living. Therefore the aim should be to popularize science in order to have a sustainable way of living. In order to understand the current basis of sustainable living it is necessary to understand the “environmental problem”. Let us understand how the environmental problem develops from the beginning.

How did the environmental problem develop?

During the first half of 1960 the entire world faced a food crisis. In

order to come out of this situation food production was increased, through the use of insecticides and chemical fertilizers. Even though the crisis was overcome the “input agriculture” left behind a new method of agriculture. In order to protect the crops from pathogens insecticides were used. While these practices were developed new and more scientific methods were tested in order to further increase the yields. In this regard one of the main inputs was using science. It was proved that it is possible to increase the yield by scientifically getting rid of the competitive and damaging organisms and by providing more nutrients. Very soon as the yield was not still





now become a reality. Agricultural chemicals have paved the way to various non-communicable diseases and also caused environmental damage. Lifestyle of people also has changed simultaneously. It is no secret that the use of technologies have been the cause of these changes. However much it is attempted to show that these changes in the life style of human beings indicate their success, immense environmental problems have been created through these processes. Realizing the present day environmental problems, as a solution ('a sustainable development'), it was proposed in 1992 that a sustainable life style has to be achieved through sustainable development.

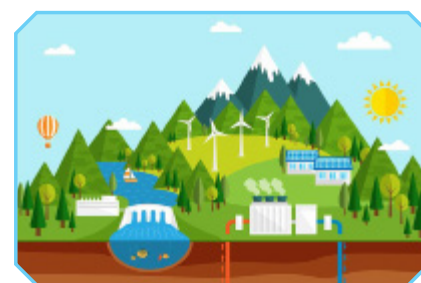
Two factors are involved in creating this background. One is the contribution of science. The second is the environmental

problem created. Some argue that it is science that has created this problem. However science is only ideas and knowledge. Technology is the application of this scientific knowledge. With this argument most people accept that it is not science but technology that has caused the damage to the environment.

Therefore when we attempt to find the causes of the environmental problem we have to arrive at the following conclusions. There are the relatively close and ultimate factors which cause the problem. Accordingly, in respect of the environmental problem, increase in population, technology, advertising methods connected with market economy are identified as the closely connected factors, while "Consumption" which is considered as the ultimate factor, is created by the influence of the

relatively close factors. Marketing techniques and the economy drive us to consumption. Clear changes in life style have been brought about through these. In general, 20% of the world population (living in the developed countries) consume 80% of the resources. Only 20% of the resources remain for the 80% of the world population who live in the developing countries. The desire of the developing country people is to achieve the life style of the developed country people who constitute only 20% of the world population. This cannot happen without destroying the environment. We are already at the 1.5 Index level of the environment foot print Index. This means that the world population is consuming 1.5 of the world's resources. That is 0.5 in excess. If the present trends in life style continues, by the year 2030 this index is estimated to go up to 3.0. It certainly is not an environmental condition that the earth can cope with. So a sustainable life style becomes essential for the survival of the human race. If not we will definitely be marching towards destruction before the earth is destroyed.

With a new understanding of the environmental problem, it was decided in 1992 to take a different path towards development. So far we have not been successful in achieving this. But today it has become a greater necessity



to bring about the change. In 1992, Agenda-21 for sustainable development was ratified in the city of Rio de Janeiro. However, once again in 2012 in Rio de Janeiro itself it was decided to institutionalize the “sustainable development process”. Also the estimate of the earth's Health which was determined by the millennium Ecosystem Assessment in 2003, indicated something extremely frightening and disturbing. Of the 38 indications, not a single was satisfactory. On the basis of this findings even though it was tried till 2015 to achieve the millennium development goals, the attempts have failed when taken as a whole.

In 2015 we began the journey towards the “new sustainable development-17”. The main idea in this was to go forward, all inclusive towards a sustainable life style. If this sustainable life style is to be achieved four sustainable concepts have to take priority consideration. They are:

1. Make room for the aspirations of the future generations, while fulfilling the necessities of the present generation.
2. The natural resources - air, water and soil and the survival of the living organisms should not be destroyed or endangered through sustainable development.
3. When using the natural

resources for sustainable development it should be done in such a way that the ecosystems are not affected adversely.

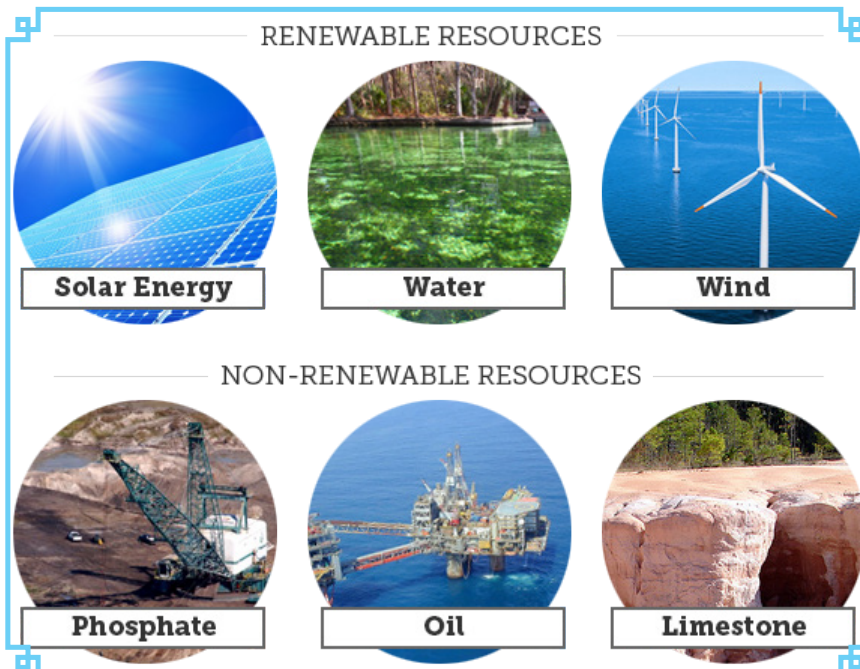
4. Sustainable development should be carried out so that it assists the development of the present generation while protecting the environment.

Herman E Dary have also been taken into consideration.

1. The rate of sustainable use of the renewable resources such as soil, water, forests and fish should not exceed the rate of their natural regeneration.
2. The sustainable use of the non-renewable resources should

not exceed the rate at which the renewable resources are being replaced.

3. The generation of solid waste should never exceed the rate at which it is naturally decomposed (broken down). Even though many such valuable ideas have been put forward as a basis for a sustainable society, whether a sustainable life style has been achieved remains



It is of prime importance to consume the resources while protecting the ecosystems by following these concepts. Karl Herik Robert of Sweden developed the “Four System Code” based on these basic ideas. The codes are:

1. The materials extracted or mined from the earth should not be increased
 2. Human society should not try to achieve satisfaction with artificial materials
 3. Nature should not be destroyed by physical processes
 4. No activity which limits the opportunities to fulfill mans basic needs should be carried out.
- In addition to the above, the three policy proposals of the economist

questionable.

The fact that “economic development” is a fallacy can be understood when we realize the fact that even in the most economically ‘developed’ country, the United States, societal inequalities exist. Some of the details stated in the report of the Stanford Center on Poverly and Inequality (2018) provide evidence for this phenomenon:

1. Inequality of salaries : The inequality of salaries has drifted further apart at a very fast rate during the past 30 yrs.
2. The salaries of heads of Institutions : By 2009 the salaries of Heads of institutions have increased 185 fold when compared

with that of an ordinary worker.

3. Homelessness : About 750,000 citizens remain homeless a day.

4. Occupation : The males are engaged in jobs with higher salaries.

5. Schooling : More of the black people are early fall-outs from schooling. It is even more among the Hispanics. The whites exceed the others when it comes to school admissions.

6. Poverty stricken children : 21% (This is the highest from among the rich countries in the world)

7. Inequality of wealth : The higher class consisting of 10% control 68.2% of the financial resources of the country (1983). (5% of the higher class-59% the lower class of 40% - own 9% of the financial resources) By the year 2007 the wealth of the higher class increased up to 73.1%.

8. Imprisonment : By 2008 about 37% of the Black Americans have been imprisoned.

The statistics of this nature still exhibit this imbalance. Even though there is enough information to rethink of the 'development' that is taking place under the present economic model, we continue to remain blind folded and continue along the same path. The opposing war against this tendency is sustainable development and life style. The main objective of a sustainable life style is to maintain a zero Ecological Foot Print.

This is a big challenge. Because of our upbringing and the main economic model that is driving us, an unlimited development model is the expectation in a limited world. Now economists accept, that this cannot happen. Hence new theories are being sought in the context of what is discussed as the Green economy. No theory would ever



solve the problem without making the life style sustainable. Here science occupies the main position. Knowledge based on accepted arguments will directly influence the sustainable life style, as well as technological applications and economic development.

Most argue to continue along this path staying within this economic model. Ecology has shown that this is an impossibility. The present economic development along with the social inequality bears sufficient evidence for this situation. The statement under the theme "a Time table towards sustainable targets" made in 2017 which encompasses the ideas of the Pope also states the same thing. This statement known as Laudatsisi very clearly states the following:

"However special the SD4 rely on economic growth to end poverty Laudatsisi criticizes the concept of infinite or unlimited growth. It is based on the lie that there is an infinite supply of the earths goods, and this leads to the planet being squeezed dry beyond every limit (LS 106) 'Depending on economic development to alleviate poverty through sustainable development'

has been criticized because it is based on the fallacy that the earth's resources are plentiful. If this journey continues the earth would be squeezed dry.

Under the present circumstances scientific principles are essential for a sustainable life style. Understanding this is a step towards solving the environmental problem. The burning problem is why aren't we getting there?



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