Monitoring and evaluation tools

The level of atmospheric CO_2 is a clear indicator of the amount of emissions from various sources (industries, individuals, transportation methods etc). Most projects related to Carbon footprint reduction in the world are essentially focused on reducing greenhouse gas emissions by using green energies and carbon sequestration in trees. As the GATo CO_2 compensation certification Conference is being launched, the idea of building monitoring tools to contribute to global CO2 compensation strategies is very exciting. A GATo student team from the University of Dschang designed a Monitoring tool able to display both the average atmospheric CO2 level, the temperature, the soil humidity, receive other Green energy projects indicators through SMS and transmit useful information to the GATo web page for further processing and display. The parameters are displayed on a dynamic Dashboard which updates automatically. The curves are used to display the parameters of the indicators. During the 1st Pan-African CO2 Compensation Certification Conference (GATo CCCC) in Laikipia University(Kenya), the Cameroon Monitoring Tool will be presented to the audience and a training session will be organized for the potential users. Also, the Monitoring Tool Commission will share and discuss selected contributions from scientists, independent researchers, students, NGOs that bring significant insight on the monitoring of the carbon footprint reduction projects.

We invite submissions that will contribute to the following focus topics:

- Projects on defining clear indicators for the monitoring of carbon footprint reduction.
  The actual monitoring Tool allows local communities to collect indicators via any cell phone through SMS: For instance, teachers in schools who benefited from a PV system can report on the increase in the number of students, the progress of the students in learning, the number of electrical appliances connected… A midwife in a maternity can report on the number of healthy mothers and babies. A project based on biogas or fuel briquettes can report on how much wood they did not use, how many trees were saved. Also, the number of trees planted in the framework of a project can be reported.

- Affordable and accurate monitoring tools for the atmospheric CO2 concentration level.
  Contributors can provide details on any CO2 level meter project dedicated to indoor or outdoor CO2 monitoring. Especially, devices or strategies for measuring CO2 absorbed by plants would be interesting. Accuracy should be a serious performance criterion.

- Calibration methods for the locally built CO2 monitoring devices
  Accuracy is an important performance criterion for measuring devices. In particular, precise measurements of atmospheric CO2 levels is not an easy task. Therefore, contributions on the strategies of calibration of CO2 measurements tools are highly appreciated.

- Estimating the average amount of CO2 absorbed by some selected african trees.
  Trees are known to be capable of sequestrating carbon, which means absorption and long-term storage of carbon dioxide from the atmosphere. Many methods of calculation of carbon sequestration values of trees exist. Some publications estimate at an average of 25 kilogrammes of CO2 per tree per year. However, the rate of carbon sequestration depends certainly on many parameters. Such studies on selected african trees would be highly valuable for the CO2 compensation projects.
- Machine learning methods to predict CO2 absorption by some african trees
  Machine learning is an application of artificial intelligence. It is a recent concept that is also associated with Big Data analysis, which can help machines to learn by themselves and predict from data. Machine learning can thus be used for prediction of

carbon sequestration values of trees. Contributions in this direction should be clear and supported by exemples.

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