

# 2017 Big Ideas Competition

## “Combating Climate Change”

### Summaries of Winning Proposals

#### Grand Prize

##### **Myanmar | Insectivore, an application designed to help monitor and assist in the reduction of methane emissions**

Insectivore is an interactive application that monitors and assists in the reduction of methane emissions from cattles, by encouraging insect consumption instead. Cows emit methane, a greenhouse gas 25 times more potent than CO2, from their farts and burps. Methane emissions contribute to global warming. Insects, on the other hand, are a much more viable and efficient food-source and are high in protein and low in CO2 product. To utilise this food-source, the app helps individuals to meet the daily required protein intake, by telling them how many insects they need to eat per day. By noting via the app how much less beef one eats, it can calculate and indicate how much methane is saved from the atmosphere. This app aims not only to encourage insect consumption among everyday people, but also to provide data for researchers and policy makers to make more accurate decisions to combat the effects of global warming.

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#### Excellence Prize

##### **Malaysia | Energy Efficiency in Building Awareness & Data Collection Through Gamification & Augmented Reality**

This proposal aims to spread awareness about renewable energy and energy efficiency to combat climate change in a fun and interesting way for the public. The EnerGo is an augmented reality mobile game that allows people to customise or upgrade their house by catching cool home features, including renewable energy (RE) and energy efficiency (EE) features for bonus/extra points. Once players catch a RE or EE feature, there will be a pop-up message to educate them about it. Players are challenged to reduce their electricity consumption by entering their reduction target in the mobile apps, and there will be an iconic character that will provide tips on how to achieve their target via push notification. This mobile game will cater to players globally. Serving a dual purpose, the EnerGo will be a medium for data collection (through survey for points or push notification).

#### Excellence Prize

##### **South Korea | Connecting ASEAN Countries Based on the Change in Aquaculture**

The focus of discussion regarding global climate change is typically on discovering the cause in order to stop global warming. This proposal however focuses on loss and how to cope with the changed environment - considering that the crisis may become an opportunity. There have been various linked relationships surrounding climate change, for example between a migration of marine species and a significant damage caused by failed mariculture. Such chained relationship has also created a new opportunity within Southeast Asia: financial and cultural relations among ASEAN countries. This project focuses on discovering those connections (that already exist) among countries, by using big data and make those connections intuitively understood through visualisation.

#### Excellence Prize

##### **Vietnam | SmartSaigon: a real-time datahub for flood monitoring and prediction**

SmartSaigon is a real-time flooding monitoring and prediction platform, which is divided into two parts: data collection and flood modeling. First, a datahub will store flood and flood-related data from many sources: waterways, pumps, flood dates, rainfall, traffic cameras and flood sensors, flood reports submitted by the citizens via Facebook Messenger, and flood reports from SmartSaigon's own sensors. Next, a collaboration between local and international data scientists will be established to study and model flooding based on the data collected. The output would be real-time or early flood alerts for citizens, as well as information on damage estimation to let the government prioritise limited resources in the most affected areas.

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Country Prize

**Cambodia | Using Open Data for Flood Resilience**

Based on the disaster risk index in 2017, Cambodia is highly prone to flooding. Open Data can help combat climate change and its impacts by providing critical information. Open Development Cambodia (ODC) believes that by increasing the availability of disaster risk information, local people can earn more knowledge and information which can help them to better cope with flood. ODC would like to provide a single online portal that gathers information regarding flood vulnerability as a central resource and make it accessible to public users. The enhancements of local capacity and disaster resilience are end goals.

Country Prize

**Indonesia | C4RA**

C4RA or Child Centered Climate Change Risk Assessment is an approach to measure social-economic and climate risks of climate change, focusing on children. C4RA visualises the maps of hazard, exposure, vulnerability, and climate risk in a certain region. The purpose of C4RA is to assist in defining climate change adaptation (CCA) strategies that are dependent on local characteristics. This fills the void of devising CCA strategies focused on beneficiary targets, following the adoption of the needs to mainstream CCA into development plan.

Country Prize

**Malaysia | IGNITE, IncentivizinG carboN FootprlnT rEduction**

IGNITE seeks to utilise state of the art technologies such as machine learning, quorum sensing and blockchain technology to combat climate change, by reducing personal carbon footprint. IGNITE stands for IncentivizinG carboN FootprlnT rEduction which is an innovative mobile app that tracks and rewards each user's activities automatically (so that false entries can be prevented). IGNITE monitors users' outdoor activities automatically, such as when using public transport, cycling or car sharing. IGNITE will also detect the number of people in a room and adjust the room temperature (where possible).The app can calculate the nominal value of carbon reduced and this is shared on the blockchain tamper-proof. Companies that promote sustainable activities can use them to further incentivise users by providing rewards, e.g. public transport discounts. IGNITE is innovative, simple, low cost and can be used by anyone.

Country Prize

**Myanmar | Shelter Tracker, an interactive application to combat inadequate shelter accessibility**

Shelter Tracker is intended to be a guidance system and a map that would help people to reach their destinations in time of crises. However, after planning and adjustments, it evolved with more features; thus turning from a simple idea into a complex system that provides details on several things. The core purpose of the application though remained: to provide help to the people at the site (however, we recognise that the effort

in the outside world was just as important). For this reason, changes were implemented that allowed the outside world to not only view what was going on but have an idea of what they could actually do to help. The goal was to highlight a system of communication and connection between the people who need help and the people who can provide help.

Country Prize

**The Philippines | Interactive Multi-Layered Indices Mapping for Climate Change-Induced Disaster Preparedness Data in the Philippines**

The proposed *“Interactive Multi-Layered Indices Mapping for Climate Change-Induced Disaster Preparedness Data in the Philippines”* is aimed at gauging the overall preparedness of the Philippines in terms of climate-change induced disasters. It is a proactive and sustainable solution to disaster risk reduction management of climate change-induced disasters through citizen empowerment. This proposed project will overlay maps of indices (Climate Change Action Index, Climate Change Information Dissemination Index, Risk Exposure Index, and Vulnerability Index) to come up with a map that can be used for resource allocation and decision making to prioritise and focus on cities/municipalities with zero or low compliance to the disaster risk reduction management strategies and high risk and vulnerability to climate change-induced disasters. This proposed project will make use of big data, crowdsourced data, and public data.

Country Prize

**Vietnam | Mobile application for disaster and extreme events early warning: a co-model of public and community crowdsourced data for urban disaster resilience in Ho Chi Minh city, Vietnam**

The idea of this application is to mobilise crowdsourced data from local community for disaster early warning and real-time forecast information. This approach allows citizens in the city to contribute data/information for disaster early warning. Everyone in the hazard/disaster prone areas of the city can take photos from their smart-phones and send it together with a statement message of the condition via the app. Everyone can also access the app for receiving real-time forecast information. The app will also provide a set of decision support information based on real-time data observation to the decision makers for defining vulnerable locations, groups of vulnerable people in specific zones for better disaster preparedness, and management in emergency. People who are using the app will be able to receive real-time forecast information for better disaster risk management.

Country Prize

**South Korea | Predicting potential distribution of endemic species about insect by climate change**

Endemic species, often scattered throughout specific nation, have high value for living resources. Insect collection is a hard job, because insects are mobile and small in size, therefore this create shortage and unreliability for distribution data. National managing plan should be a priority to prepare for an environmental change around ecosystems despite insufficient data. An open system of data gathering and detailed information could solve the current problems of collecting data on insects. This system consists of a prediction model and verification component. The system aims to predict a potential habitat model which is matched in South Korea. It provides various visual maps for the general public and those at the specialist level with insect verification system. It could be applied immediately after making cooperation between taxonomist, field expert, and hobbyist.