

Emotional Utility and Climate Change: Understanding People's Mood and Tone

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Project Background: Interactions between Climate Change, People and Environment

“Climate change refers to long-term shifts of weather and temperature patterns”

(ref: <https://www.un.org/en/climatechange/what-is-climate-change>)

Human activities have been the main driver of climate change through usage of oil and gas for energy usage- *coal powerplants*, cutting down forests – *deforestation*, new road construction(Tarmac), eating meat - *livestock farming”*

Climate change can affect our health, ability to grow food, housing and safety. For example through: sea-level rise, temperatures rise, drought and **poor air quality.**

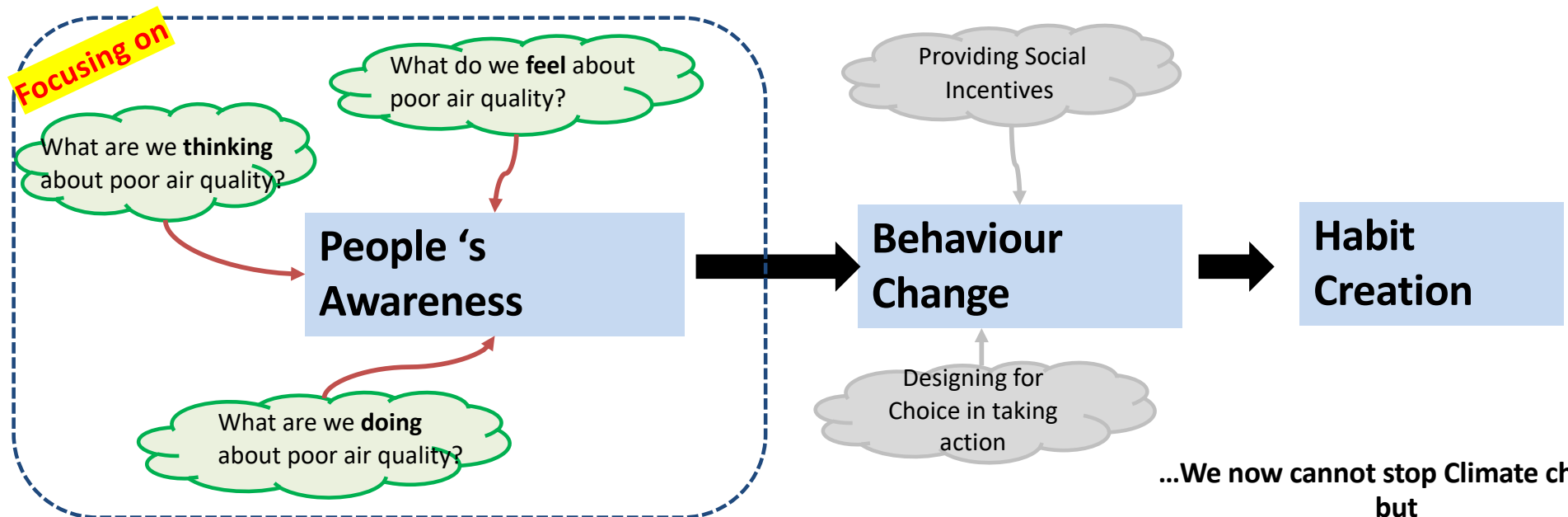
Project Background: Thailand and Poor Air Quality

- Climate change and its root causes are contributing to **air pollution** such as motor exhaust, industrial pollution and dust carried by the winds.
- In 2021, appx. 71,184 premature deaths in Thailand were attribute to **PM2.5** (from Health Effects Institute 2021).
- Poor Air Quality issues directly impact **our well-being**.
- The Government of Thailand has tried to improve the air quality by introducing bans on burning. However, the air quality in Thailand still degrades.

What about us? How can we protect our well being ?

Project Question: Climate Change needs Behavioural Change

“How do we change our behaviour to reduce poor air quality in Thailand?”



...We now cannot stop Climate change but we can decide how bad it will be...

Project Hypothesis:

The potential of understanding Thai people's emotional and behavioural state might throw light on developing behavioural change for the long-term climate crisis.

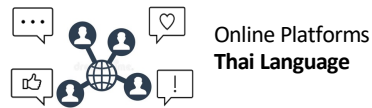


To investigate **Thai** people's **awareness** of climate change and how much **knowledge** people have on issues that climate change creates

Methodology: 3 Connected Phases

Phase 01

Model Training Creation



Data Collection: **Big Stream**

Data Pre-Processing

Training Data & Model
Creation

Model Evaluation

Outputs from this Phase:

Climate Filtering model

Emotion model

Phase 02

Inferencing and Analysis Process

Historical Data and Real-
Time Data Collection via
Big Stream

Data Pre-Processing

Climate Filtering model

Emotion model

Outputs from this Phase:

Opinion of Climate Annotation
Data

A Set of Emotional Categories

Phase 03

Social Cognitive Experiments

Opinion of
Climate
Annotation Data

A Set of
Emotional
Categories

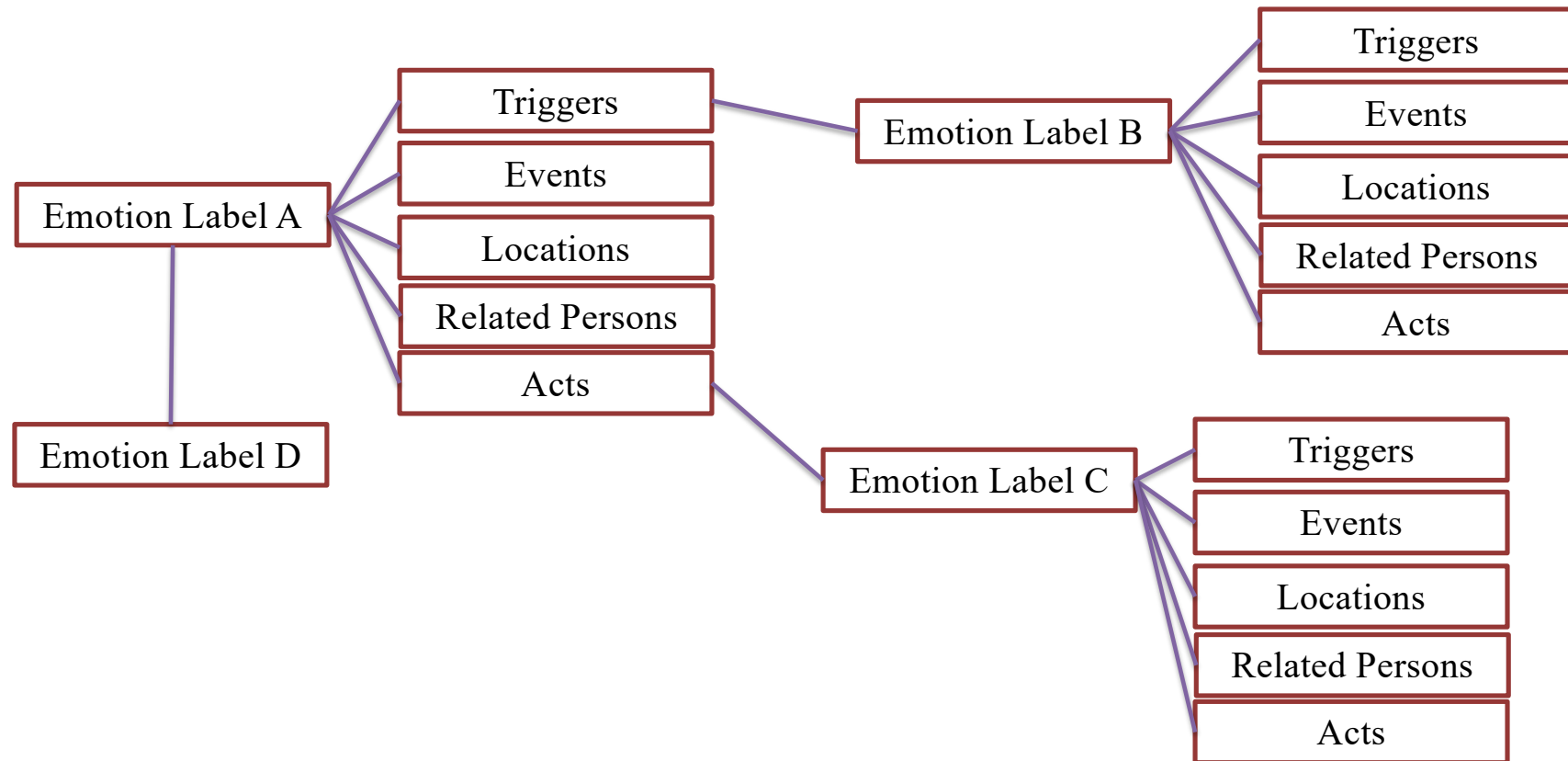
Emotion and Behaviour
Workshop – **A Board Game**

Emotion and Behaviour
Analysis

Outputs from this Phase:

A Diagram for Emotion and
Behaviour Network

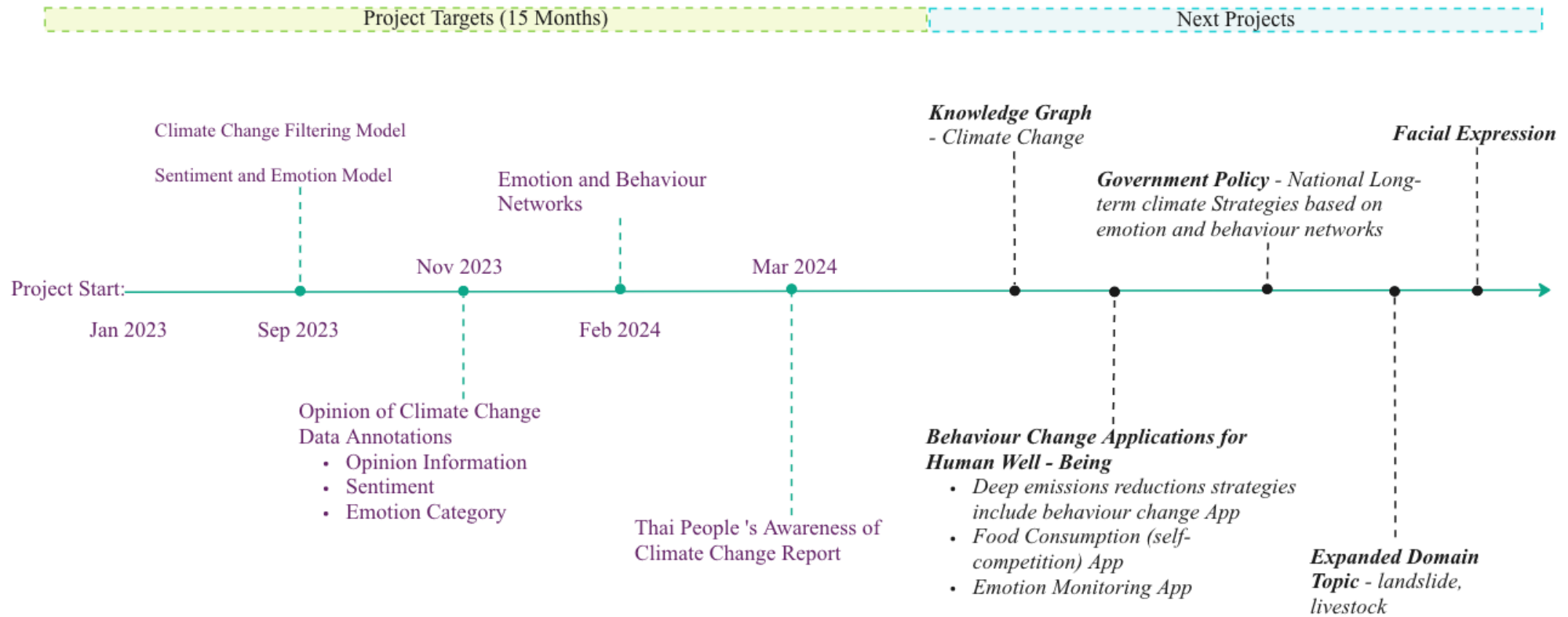
Diagram for Emotion and Behaviour Network



Project Outcomes:

- Thai people's opinion of climate change data annotations including information, sentiment and emotion categories
- Emotion and behaviour network in terms of climate change in Thailand
- Knowledge sharing about Natural Language Processing (NLP) and Social Cognition with other countries and other cultures

Project Plan: 15 Months between January 2023 – March 2024



Project Impacts

- Increased understanding of people's feeling and behavioural (awareness) for implementing **emotional AI services** in the future. Rather than focusing on sentiment analysis and words, this project leads to insight that relies on emotional tones and behaviours.
- Increased solutions for human behavioural change to the long-term escalation of climate change using social cognition.

Project Impacts

- Building up research capacity by working with international collaborators. In particular towards social cognition principles. People with different backgrounds and different cultures can express emotions and act in different ways, even if they are in the same situation.

Conclusions:

- Using Deep Learning for understanding emotional and behavioural states towards the Emotion AI
- Empathise with people thoughts, feelings and actions about climate change issues before encouraging them to change their behaviour
- Expanding the ML models to other climate domain such as landslides, livestock and so on.
- Seeking new partners for developing this project and creating solutions to reduce the climate issue in our countries

Thank you!

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