**Routine (replace the agri to forest)**

1. Choose the study area
2. Stack all the biomass map (AGB, BGB, soil, litter)
3. Calculate conservation cost (incl transportation cost) and carbon credit to find areas with additionality
   1. Compare with deforestation risk (\*consider whether the forests are intact forests)
   2. Maybe try using Canada’s carbon price (CAD 65) and change it
4. Result of the final revenue (carbon credit – project cost)
5. Extra things:
   1. Compare with KBA areas
   2. Consider crop suitability under climate change

**Profit:**

1. Above ground biomass:
2. Belowground biomass
3. Soil carbon
4. Litter and dead wood carbon

**Cost:**

1. Agriculture: land use/opearatio cost/ labor cost/ potential revenue
2. Transportation cost: fuel.......
3. Restoration cost:…
4. Co-benefit:
   1. Identify: ES, species protection, human-wellbeing, KBA

**3/10 Prof feedback session**

1. **Find the threshold for deforestation**
   1. Is it intact forest loss? Is it due to humans? or fires? Etc...
   2. read paper for intact forest and bring intact forests
2. choose conservation project (not restoration project) for Canada since they have large intact forests
3. Bring transportation cost
4. After finding the optimized area for the project, do extra things
   1. e.g. To maximize carbon target to some degree to meet the biodiversity protection target, we should make the area to cover about 40% of KBA
   2. Create a reforestation model
      1. e.g. distance to road, population density, cultural differences toward agriculture,
   3. **consider climate change projection for crop suitability**

**3/20**

1. Prepare carbon stocks maps (in tons of CO2/ha)
   1. AGB + BBG + Soil + Litter
2. Find areas with additionality
   1. If we assume that deforestation risk should be greater than 50%
      1. additionalC = (defRisk4>0.5)\*total\_CO2
   2. Need to avoid protected areas – if the area is inside PAs, the project would not be additional
3. Consider viability of the project
   1. Multiply with carbon price ($2-50)
   2. How much do we want to make this NBCS generate, so it is financially viable? (e.g. $3000/ha? -- this can be compared to opportunity cost)
      1. Opportunity cost (possible revenue from agriculture?
         1. Yield \* price – operation cost
         2. We can find out how revenues from agriculture change under different climate change scenarios based on crop suitability (e.g. RCP)
         3. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0261976>
      2. viable = total\_CO2 \* 2(#carbon price)> 3000 (#opportunity cost)
4. After finding the financially viable land, consider co-benefits
   1. Stack the KBA map and use extraction to find the areas that most overlap with the species’ range
      1. e.g. To maximize carbon target to some degree to meet the biodiversity protection target, we should make the area to cover about 40% of KBA (refer to L10 slides!)