



## Create a Scenario (RCM)

$$\begin{array}{l} \text{Baseline} \\ \text{(Historical Data)} \end{array} + \begin{array}{l} \text{Change} \\ \text{(Model Projection)} \end{array} = \begin{array}{l} \text{Scenario} \\ \text{(Future Projection)} \end{array}$$

1. Each group will create an ensemble of future projections for temperature and cumulative rainfall for their country for a chosen time slice and a chosen scenario. The task will be done using the equation above.
2. Start with the baseline climatologies of temperature and rainfall from monthly data provided earlier. Import into the given Excel spreadsheet.
3. Choose a time slice and scenario for future projections.
4. Now search the table provided for the model projected change for each season for the scenario and time slice you are analyzing. Fill in the Table below.

Month	Temperature <i>Change in °C</i>		Precipitation <i>% Change</i>	
	HAD	ECHAM	HAD	ECHAM
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

5. Start with January. Add the projected changes from the table above for January to the baseline value for January. For temperature this addition will be the absolute value provided, whereas for rainfall the addition will be a percentage of the baseline. This gives (as in the equation above) the projected temperature or rainfall for January for that time slice. Repeat for the other months in the year to produce the projected climatology for the selected time slice.





6. In Excel plot the baseline and projected climatologies on one graph for temperature and another for rainfall.
  
7. Answer the following questions:
  - a. Is there any (dis)agreement between the chosen “driving” models?
  - b. How are temperature and rainfall projected to change as the century progresses?
  - c. Are there any differences in the projected changes for temperature and precipitation for the different driving models?
  - d. Will any time of year warm more than another?
  - e. What month or period has the greatest percentage precipitation change?
  - f. What likely impact (if any) will this have on your country?

