

## Climate change - who should act?



### Introduction

To aid pupils understanding of why reaching a consensus can be difficult in international negotiations (such as the Copenhagen Climate Change Conference in December 2009) pupils are going to have a debate. They will try and reach a consensus about who should pay for the impacts of climate change, with each group representing a different country. In preparation for this and to help them establish their position for the debate, they will use a set of 3 maps to establish:

1. The likely **impact** of climate change on their country (based on MET office predictions)
2. The **responsibility** their country has for potentially causing climate change (based on carbon emissions)\*
3. The **financial means** their country has to pay for adapting and mitigating against climate change (based on GDP/capita)

\*based upon the generally held scientific view that human caused carbon emissions have led to the problem of climate change

Pupils will establish how their country compares to others for these 3 indicators by ranking their country from 1 to 10 for each of them. To illustrate this visually to other groups, pupils have the option of using balloons, to blow them up to different sizes based on the rank they gave for that indicator. In the debate this will give them a visual picture of the differences between countries, allowing them to anticipate their arguments and form alliances more

easily. They then have a debate- each group's task is to win the most from others while costing themselves the least.

## Age range

The activity is aimed at pupils' aged 11-16. Support may be required with younger pupils in developing arguments and debating skills. Balloons may not be necessary with older pupils.

## Time

2 hours are suggested - 1 hour for preparation and 1 hour for debate. However the length of each session may be dependant upon pupils' prior debating skills and understanding of the issue.

## Curriculum links

This activity relates to the following areas of the curriculum:

*Literacy and English* – development of debating skills

*Geography or Science* – researching the impact of climate change, resource use and sustainable development

*Geography* - inequality and solving global problems

*Citizenship/Global Citizenship or ESDGC* – relating to institutions and decision-making.

## Learning Objectives

It is expected that pupils will...

- Know which countries are most responsible for climate change, and where the impacts of climate change will be felt most severely
- Understand how the issue of climate change involves inequality of power, resources and responsibility between different countries, and how this makes reaching an '*international*' consensus on action difficult
- Develop their ability to use information to prepare for a debate, and allow them to predict the position of others, prepare counter-arguments and present an argument.

## Resources needed

Each group will need:

- An atlas
- 3 different colour balloons
- The climate maps worksheet
- The MET office climate change impact maps (4 small maps) sheet\*
- The Worldmapper country income map (distorted map based on GDP) map sheet\*

\*these are colour maps but can still be read in greyscale

You will also need class/group access to the internet for the Guardian interactive CO<sub>2</sub> emissions map. Pupils will need to access this a group at a time.

## Suggested Activities

### Starter

Snowball activity- write *Copenhagen Climate Change conference* as a title on pieces of paper distributed to pupils, and ask them to write one thing they know about this on the paper before screwing it up and throwing it to someone else. The next person has to write something new, before passing it on again. Try this for a few rounds and then consolidate, to get a sense of what pupils know about the conference.

Use this activity to introduce the idea of climate change as a global issue for which action is very difficult to get consensus about as it involves many countries, some of whom are more responsible, some of whom will be impacted more, and some of whom have more ability to cope with due to their financial resources. It is important to stress that money is an important factor in being able to cope with its effects.

### Main activity 1

Introduce the activity. Put the debate title (below) on the board, and explain that pupils are going to prepare for this debate. The objective for each group is to have 'won' the most from other countries, and 'cost' themselves the least. The debate title is:

***Both adapting\* to and mitigating\* against climate change will cost money. Which countries should pay for this?***

\* *adapting means coping with the changes (e.g. by building flood defences), mitigating means trying to limit what the changes will be (e.g. by reducing carbon emissions).*

Assign each group a **country**. Ensure **a range of countries** around the world are represented, but try and ensure you include:

1. either the USA or the UK
2. either China or India
3. either Malawi or Bangladesh

Then give pupils the atlases to find their country and the two paper maps, and have the guardian climate map on the board to refer to. Give them the **climate maps worksheet**. They have to use each map, and give their country a mark out of 10 for each of the 3 factors. You could then ask them to **blow up a balloon** to represent how their country relates to others.

When they have finished, give pupils some time to prepare for the debate. They need to think of arguments that help them to say:

- Why their country should pay less
- Why other countries should pay more

Encourage pupils to consider who could be their 'allies' or their 'enemies'. Get them to try and think about what arguments people will use against them, and prepare counterpoints.

## **Main activity 2**

Organise the debate. Give each country 1 minute to present their argument and then have an open forum for discussion. The class must reach a **UNANIMOUS** agreement on this by the end, or the class has failed to reach a consensus.

Allow 20-30 minutes for this.

Spend the rest of the time to try and draw out the difficulty of reaching a consensus if each country is trying to reach the objective (i.e. act in their own self-interest). If they did reach a consensus, ask them to think about how they overcame self-interest. You can use this discussion to highlight why a consensus at Copenhagen was difficult to achieve.

To help them think, ask pupils to think about two things:

- What is it about climate change that makes this debate hard?
- What is it about this sort of self-interested negotiation that makes consensus hard?

To finish, ask pupils to list 3 skills they think they have learned about debating.

***Plenary***

Ask pupils to pretend they are UN Secretary General, Ban Ki-moon, and to list 3 things they would do to help countries agree a consensus before the next climate conference in Mexico (November 2010).

**Extension**

If you want pupils to explore in more detail the link between the areas of the world responsible for climate change and those impacted, try the Mrs Camara's stall activity:

([www.oxfam.org.uk/education/resources/climate\\_change\\_the\\_human\\_impact/?20](http://www.oxfam.org.uk/education/resources/climate_change_the_human_impact/?20))

## Climate maps worksheet

Name of Country:

You need an **atlas** to find your country, and access to **3 maps**. You need to use the tables below for each map to give your country a **score out of 10** for how it compares to other countries.

### 1. MET office human impact maps

You want to give a score based on how much impact climate change will have on your country compared to others

### 2. Guardian interactive CO<sub>2</sub> emissions map

(on a computer / interactive whiteboard)

You want to give a score based on how much carbon your country emits compared to others

### 3. Worldmapper Country Income map

You want to give a score based on much money (Gross Domestic Product or *GDP*) your country has compared to others

So find each map and then complete each of the tables, giving a score out of 10.

**Table 1: MET office maps**

Human impact maps	TICK IF WILL EFFECT (tick twice if severe)
Water stress and drought risk	
Flooding risk	
Crop yield reduction risk	
Human health risk	
<b>Overall mark out of 10 for human impact</b> 10 = worst impact 1 = least impact	/ 10

**Table 2: CO<sub>2</sub> emissions map**

*From the Guardian online Interactive CO<sub>2</sub> emissions map*

<b>CO<sub>2</sub> emissions map</b>	<b>Compare to other countries and decide</b>
Overall mark out of 10 for size of CO <sub>2</sub> emissions 10 = highest emissions 1 = lowest emissions	/ 10

**Table 3: Worldmapper Country Income map**

*The countries size is shown depending on how high their income (or Gross Domestic Product, GDP) is*

<b>Country income map</b>	<b>Compare to other countries and decide</b>
Overall mark out of 10 for country income 10 = highest income 1 = lowest income	/ 10

**Completed the tables? Now use the balloons!**

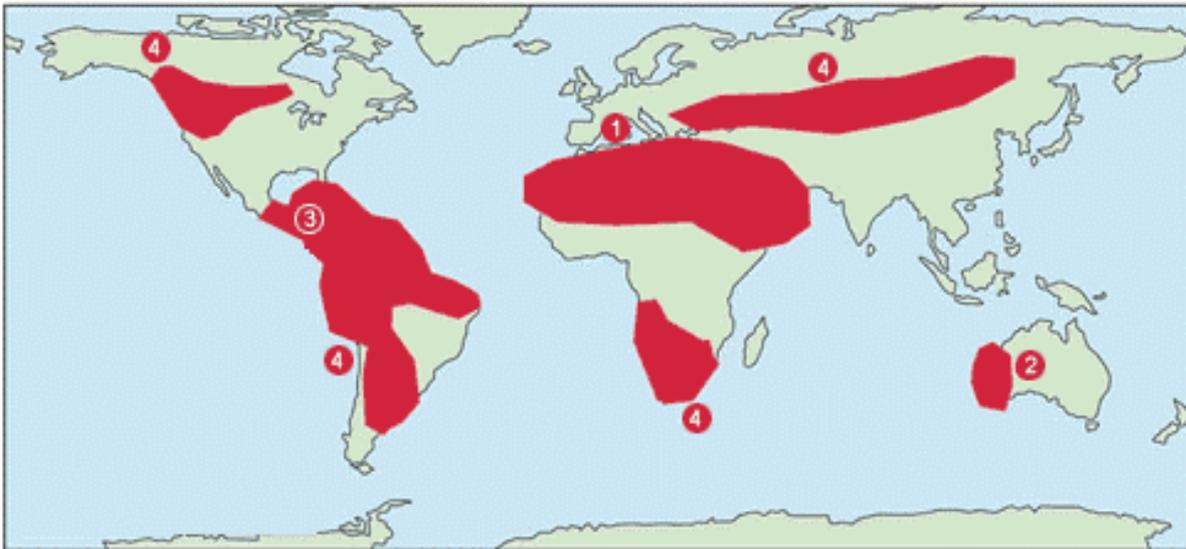
When you have given a score, you can blow up each of your 3 balloons up to a size that matches the score you gave (if you gave a 10 blow it up really big, 1 then don't blow it up at all). Your teacher will tell you which colour to use for which map.

## 1. MET OFFICE CLIMATE CHANGE MAPS

These colours on these maps show where different climate change impacts are predicted to occur.

### Water stress and drought risk

1. Large decreases in river flow up to 70% by 2071-2100 across west Asia, the Middle East and Mediterranean basin
2. Large decreases in river flow 40-60% by 2071-2100
3. Large decreases in river flow up to 70% by 2071-2100
4. Severe increases in Palmer Drought Severity Index (PDSI) 2000-2046



### Flooding risk

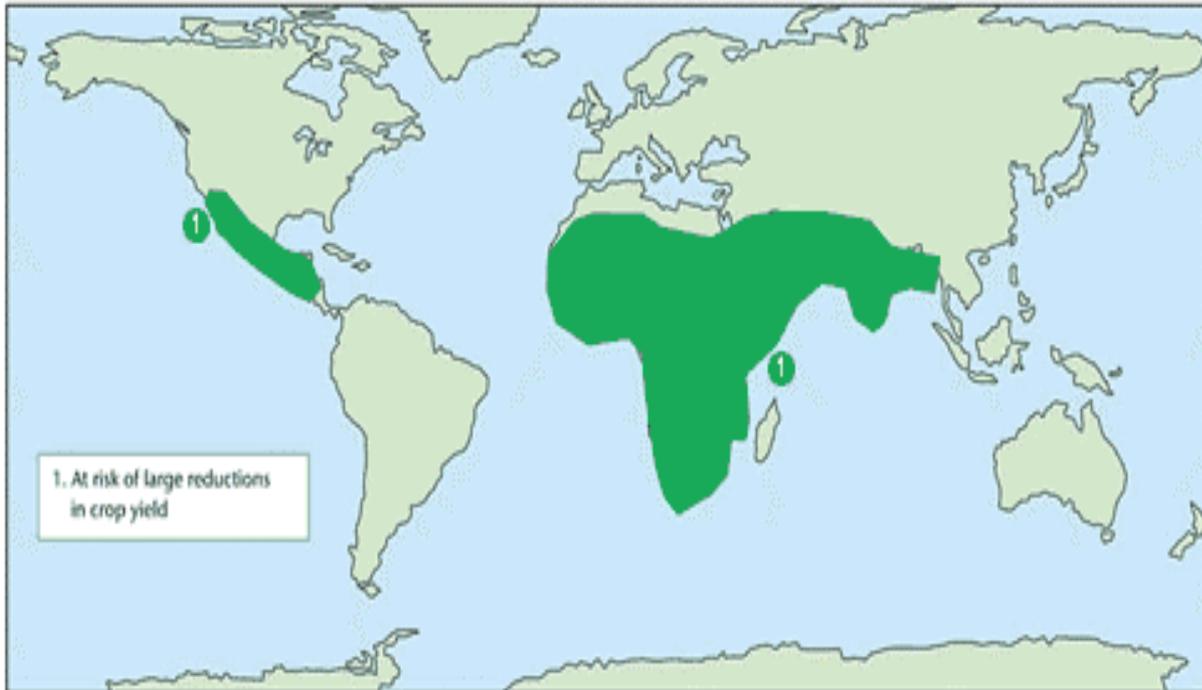
1. Large number of people at risk from seasonal flooding of Ganges, Brahmaputra and Meghna rivers
2. Large number of people at risk from sea-level rise





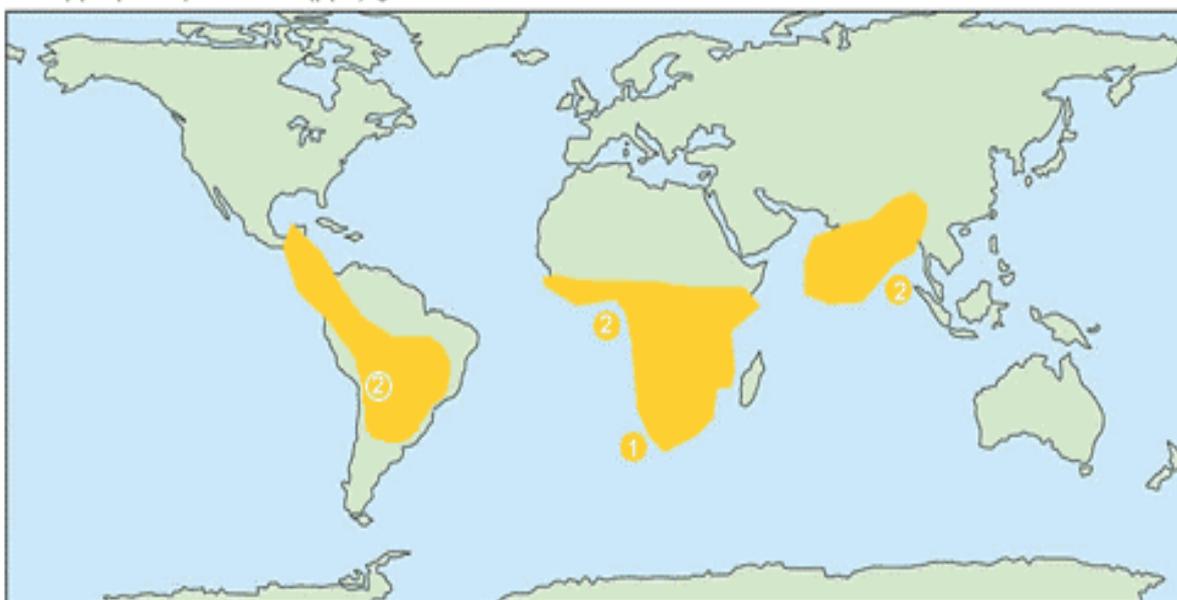
### Crop yield reduction risk

1. At risk of large reductions in crop yield



### Human health risk

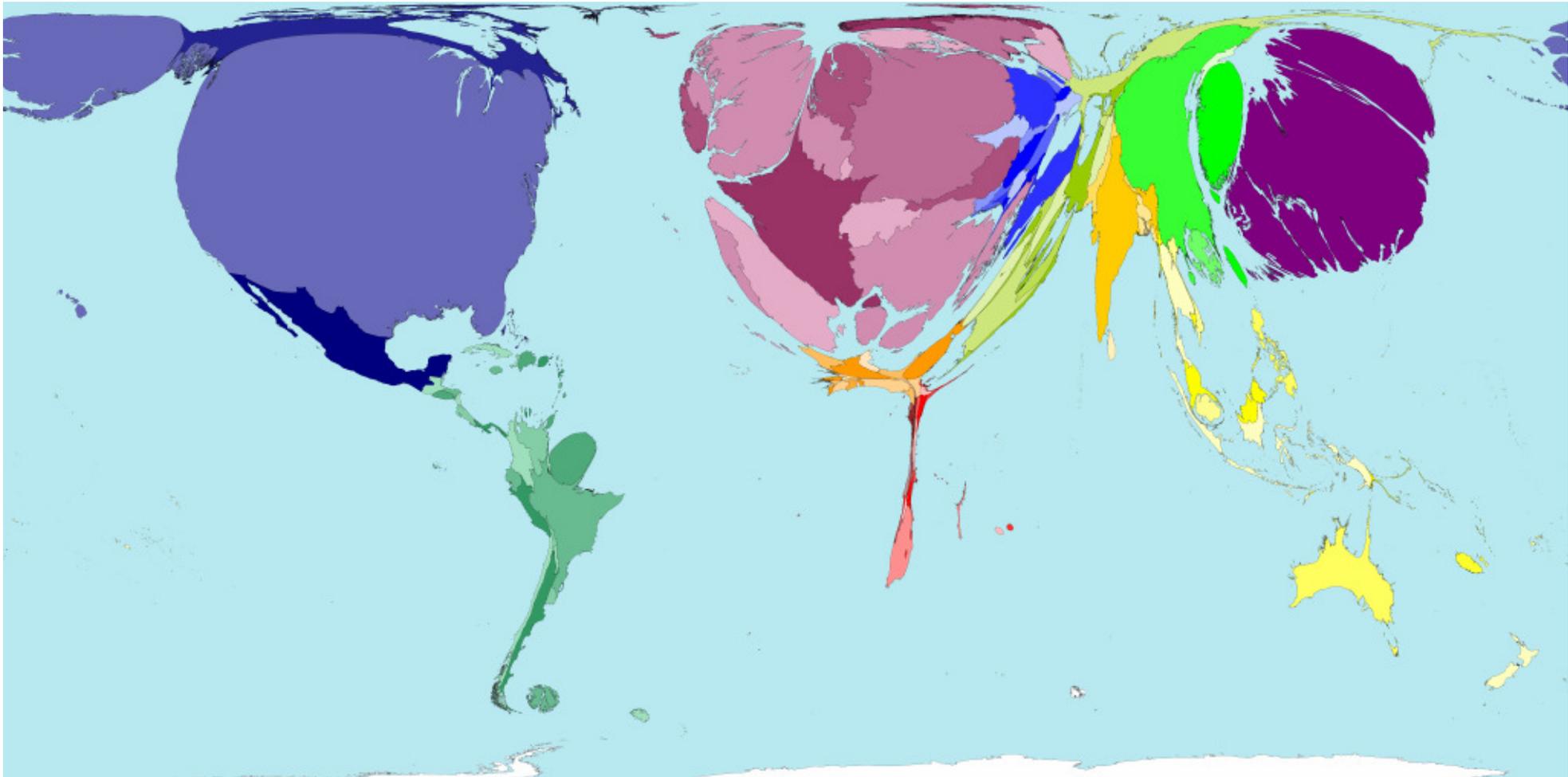
1. Population particularly vulnerable to health risks of climate change
2. Ozone concentrations at risk of rising above the World Health Organisation (WHO) 60 ppb parts per billion (ppb) guideline



Source: MET office <http://www.metoffice.gov.uk/climatechange/guide/effects/security.html>

## 2. Worldmapper Country Income Map:

This map shows the size of the country based on how much money it generates every year (Gross Domestic Product/GDP)



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