

THE DEFORESTATION CLIMATE CHANGE THEORY

Dorin Preda

(Annex 1)

<https://doi.org/10.17605/OSF.IO/6KRXW>

Based on the 2020 - 2024 study and books: <https://dpreda.net/earth/>

[Reference] (Annex 3)

- 1) Global warming from burning of fossil fuels has added up to the older deforestation climate change, amplifying the current crisis.
- 2) Since prehistory, and especially in the past 200 years, deforestation has altered the powerful water cycle, thus Earth's climate.
- 3) Most recent studies lead to more deforestation and drought by claiming that forests and water would produce global warming.
- 4) However, in reality, vegetation produces shadowing clouds, and water cools more than it warms through its greenhouse effect.
- 5) The primary cause of climate change is the deforestation of low latitudes pushing oceanic humidity to higher latitudes, thus heating them.
- 6) **Deforestation warming is more powerful than man-made carbon gases warming *, thus large re-vegetation could restore local climate.**
- 7) **Special procedures and new useful trees can prevent fires, boost economic development and capture CO₂.**
- 8) Revegetation with fruit trees also provides animal food, doubles agricultural production per hectare, and improves people's health.
- 9) Large-scale land rehabilitation programs at least in Africa and Australia could improve the climate in both hemispheres.
- 10) This would result in significant benefits for all parties involved, including land development, the energy sector, agriculture and society.

Note * : We do not dispute the climatic effects of carbon gases as stated by the IPCC, or their magnitude. We use the official numbers for the warming of carbon gases and for their known enhanced effects such as water feedback.

A careful reading of this presentation will help anyone understand the main cause of climate change and how to properly restore the climate.

Briefly, it says that global warming and climate change are only due to the excess carbon gases produced by our society [1].

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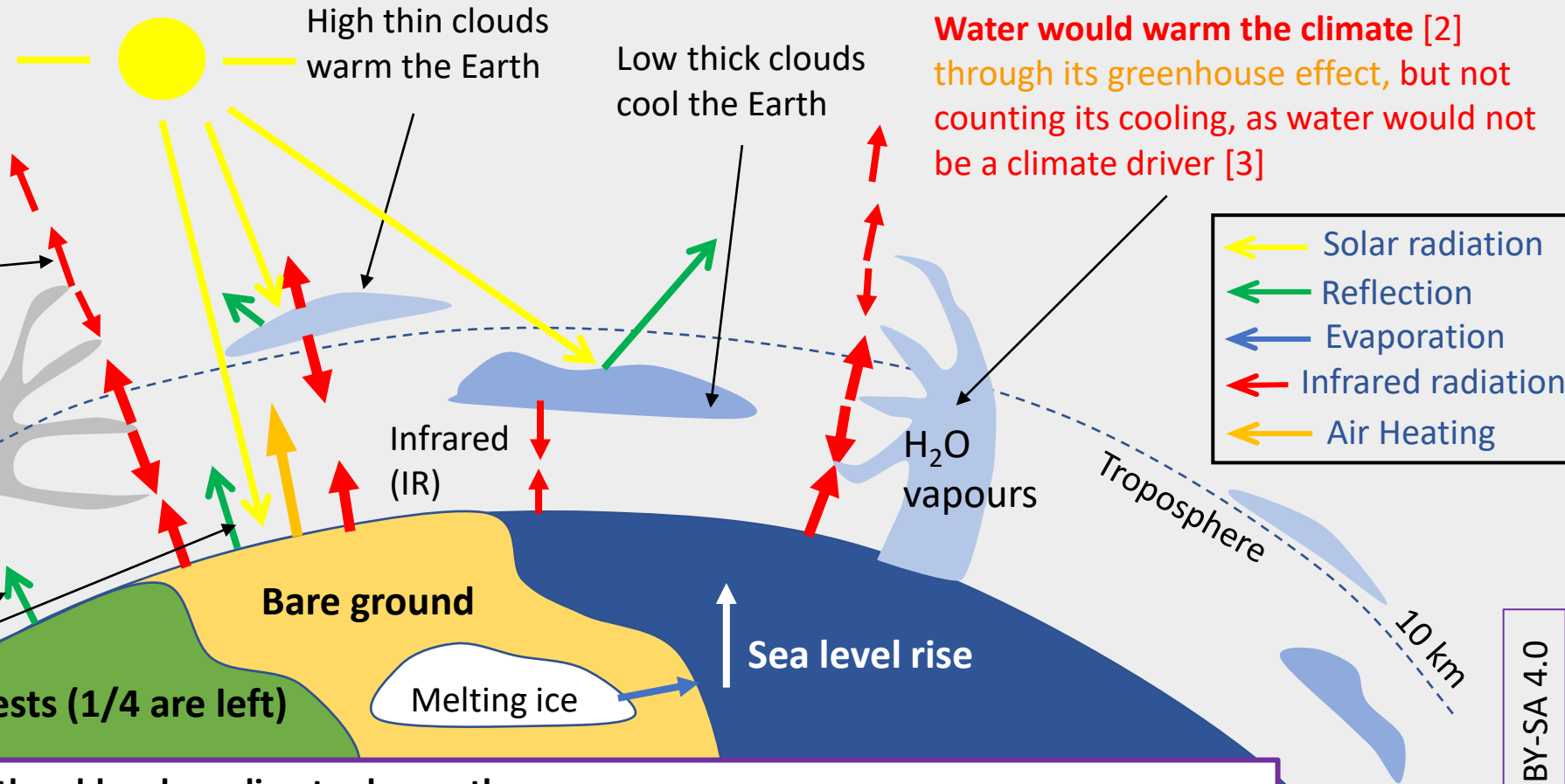
Carbon dioxide produces the greenhouse effect by hampering the exit of infrared radiation to space

Fossil fuels burning
 Agriculture
 Extractive carbon gases
 Vegetation burning
 Industry (cement)

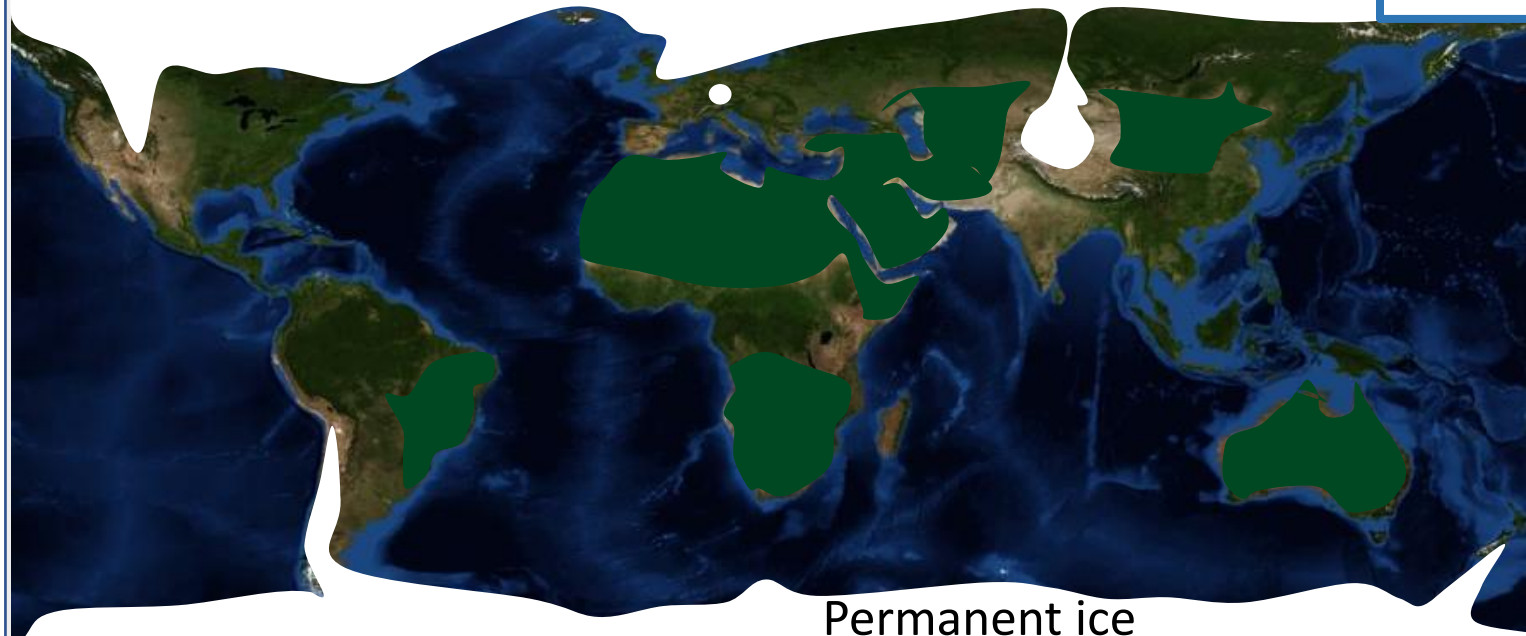
Forests would warm the Earth because they reflect less solar radiation than bare ground [4]

Problems of the old carbon climate change theory:

- Uses unreal parameters (radiative forcing, planetary temperature)
- Opposes reforestation and water vapours in the air [3]
- Prefers computer simulations of upper or outer atmosphere to ground measurements
- Overlooks that the global warming benchmark is the aboveground air temperature.
- Gives the driving role in climate to CO₂, and only a secondary role to vegetation and water.
- Its supporters oppose proper scientific debate, which is the fundamental process of science.



Permanent ice



Permanent ice

IF HUMANS NEVER EXISTED, NOW IT WOULD BE:

- The beginning of a glaciation; much more ice
- Almost all land covered in forests; few savannas
- Full original biodiversity
- Much more water on land, more rivers and lakes
- Less than half of today's CO₂, so too little for plants
- Less water in the atmosphere; no floods
- Thick soils cover the land with deep, moist litter
- Frequent small rains, no droughts because of abundant above land freshwater and groundwater.

EARTH NOW

- About ¼ area and 1/7 of the initial forest mass
- About half of Earth is barren land or desert
- The global air circulation that is less discussed in this presentation is strongly influenced by the land.
- Global warming
- About 420 ppm of CO₂
- Far less biodiversity and mass of wild animals
- 90% of Earth is stressed by human input.
- More than 1/3 of land are the deserts we created.
- Exceptional heat, floods, droughts, tornadoes.

SO, HOW DID WE DO IT ?



About 1 million years ago, humans invented artificial fire and used it to make clearances in forests for hunting and defence.

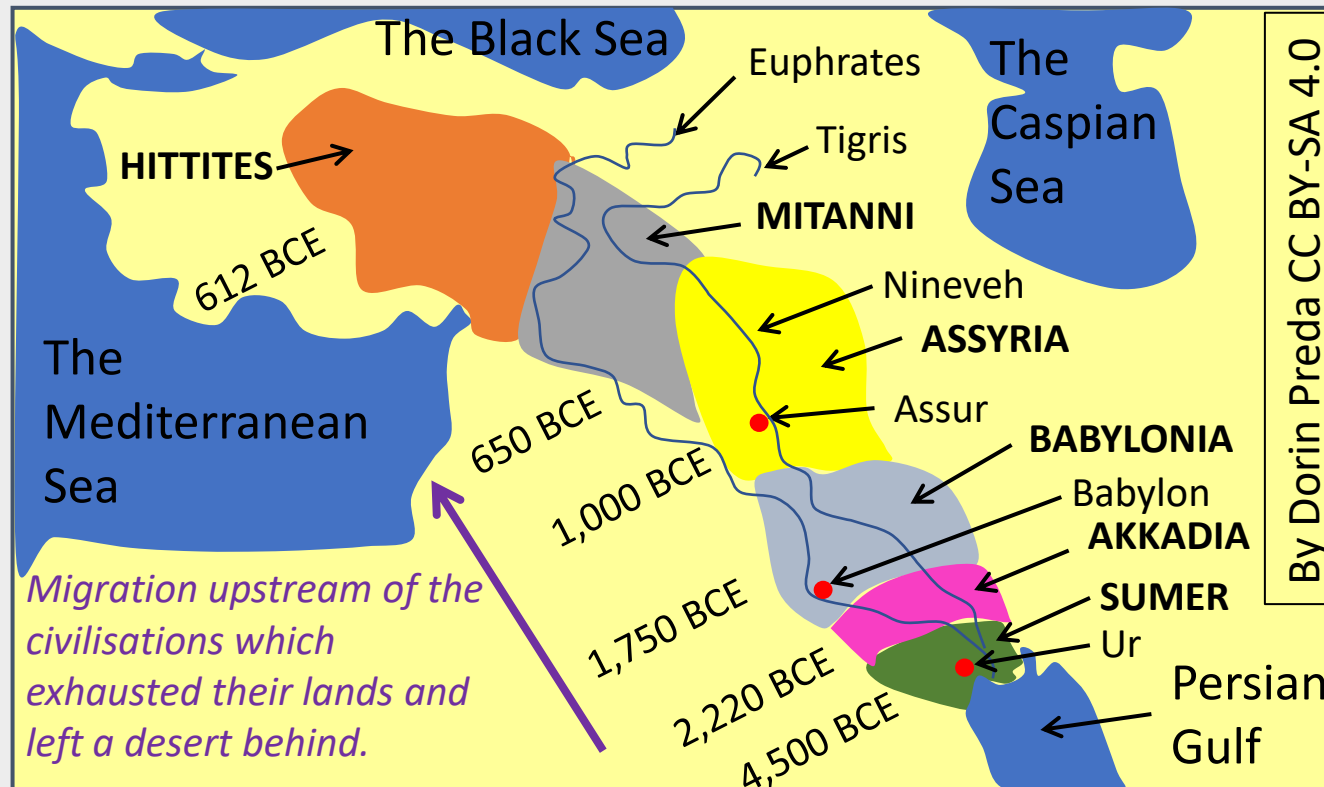
Later, they burned the forests to make room for pastures, settlements, crop fields.

However, when vegetation is cleared, less clouds are formed and precipitation decreases, leading to droughts and further vegetation loss, like a destructive avalanche.

Details at: <https://dpreda.net/earth/>

Initially, people settled in the most fertile regions around river mouths, that were the best for the newly-invented agriculture. The first civilisations appeared on the Tigris and Euphrates rivers, in Mesopotamia, near the Persian Gulf. →

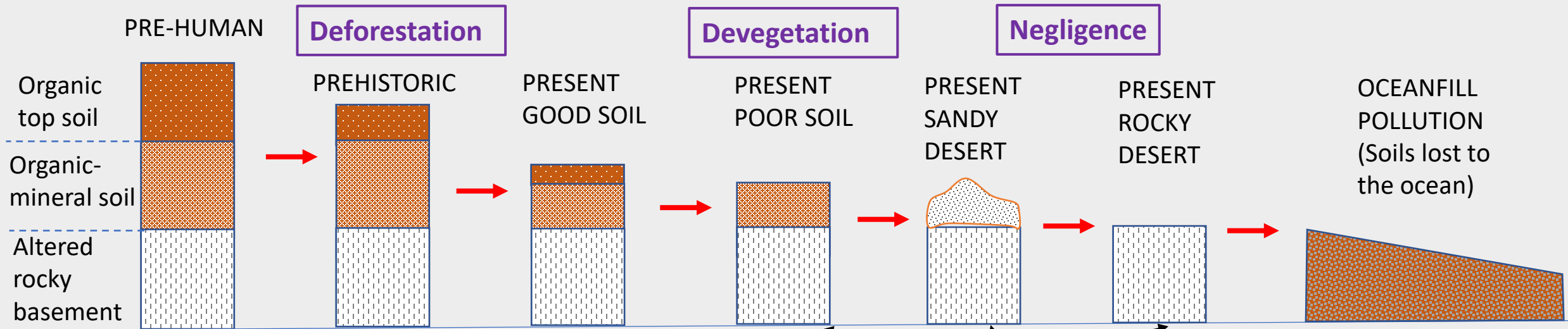
The formerly green Mesopotamia is now the Middle East desert, while elsewhere on the same latitude the land is still green.



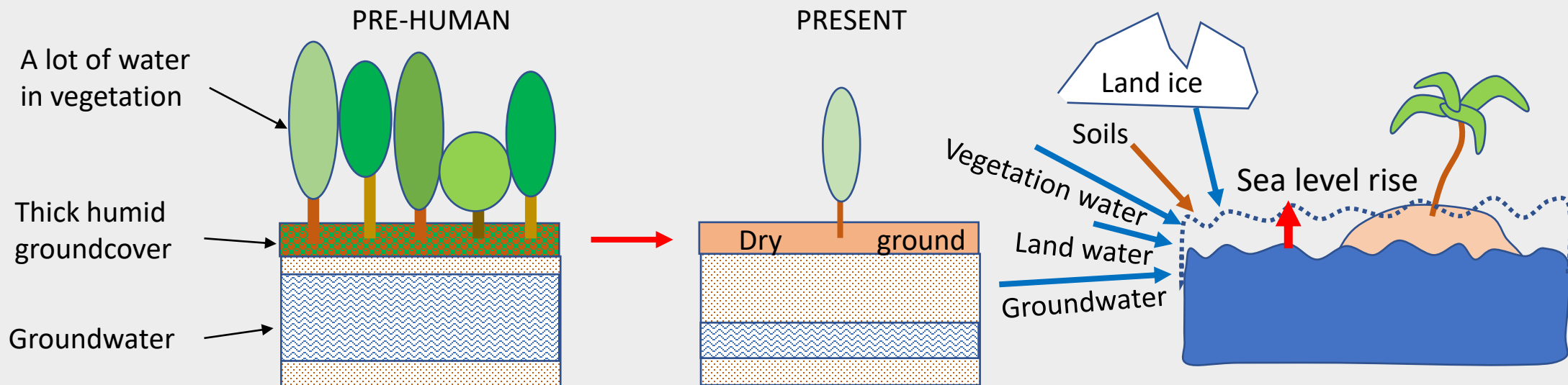
Deforested land quickly decays in the sun after agriculture tillage. Dried soil exhausted by irrigation is then eroded away and only the sand remains.

All ancient civilisations grew on fresh good lands, then their power diminished as the fertility of their lands was lost, and people had to move on new lands.

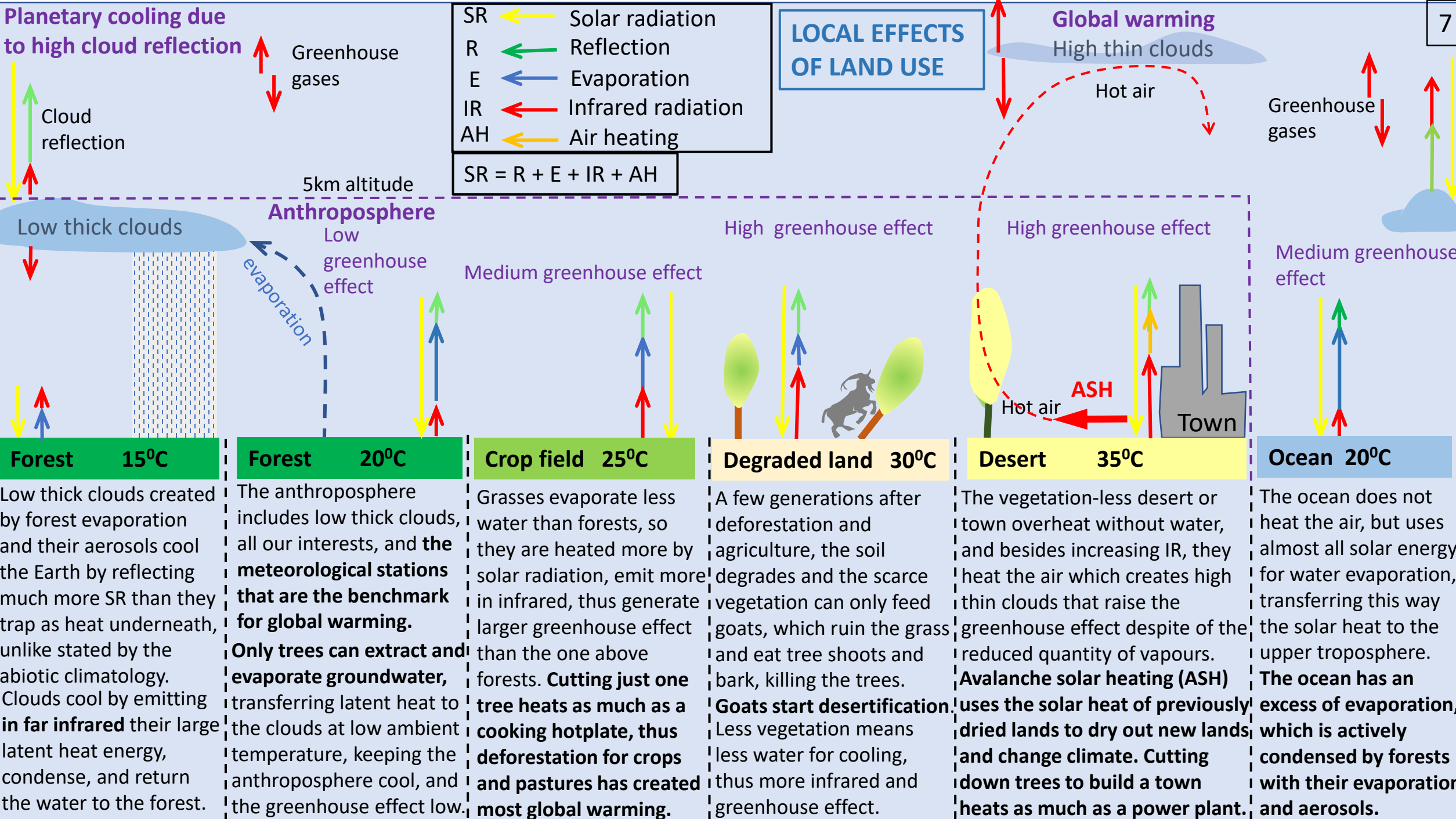
The pastoralists on the Eurasian steppe cut their forests and also lost their soils, resulting a chain of deserts from Europe to China.



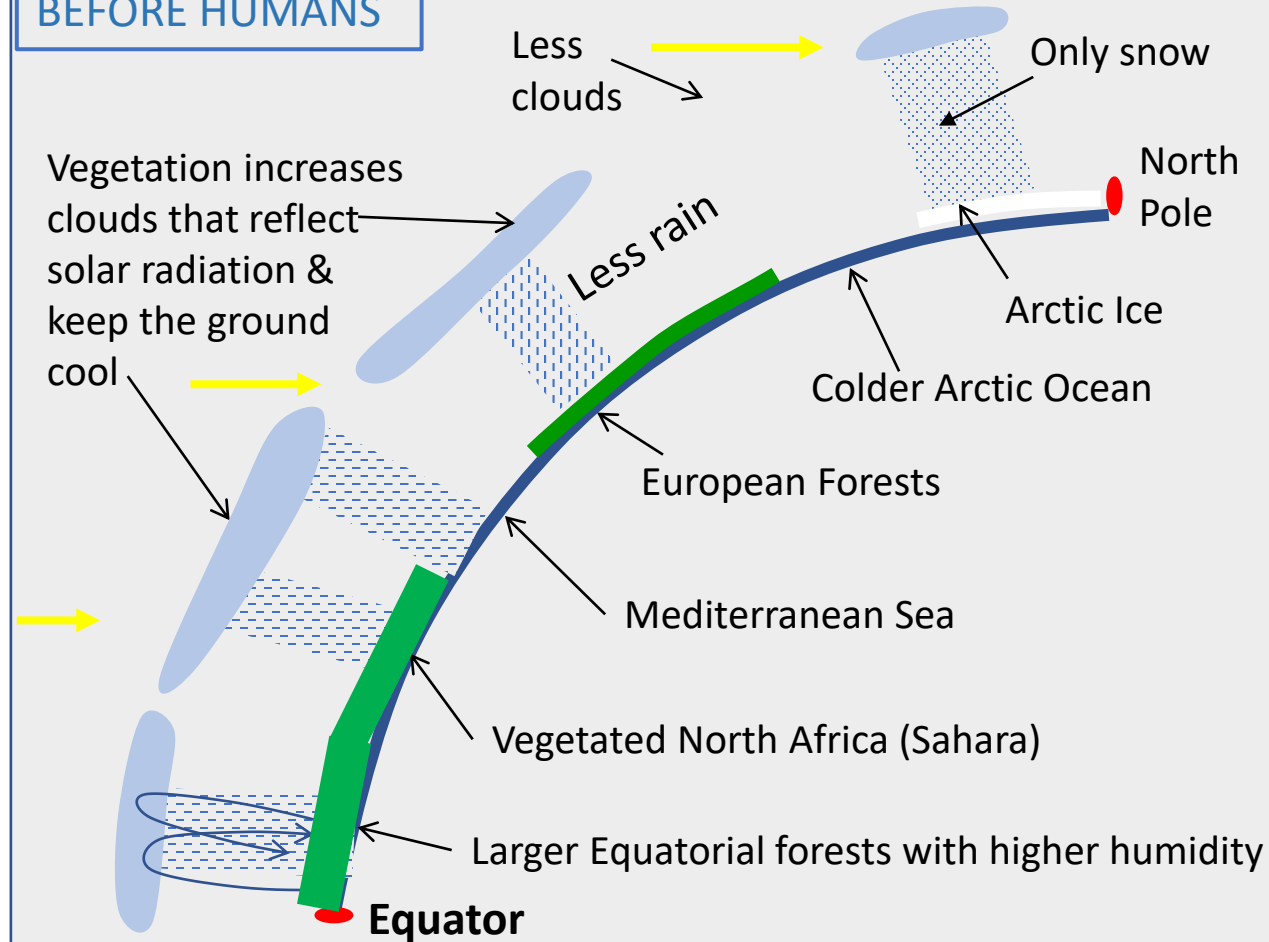
The originally clear, now muddy rivers carry the soils to the ocean, while the light-colored, degraded land is visible from space. **The largest global loss is that of the irreplaceable soils, because only thick soil can support large trees that create a balanced climate.**



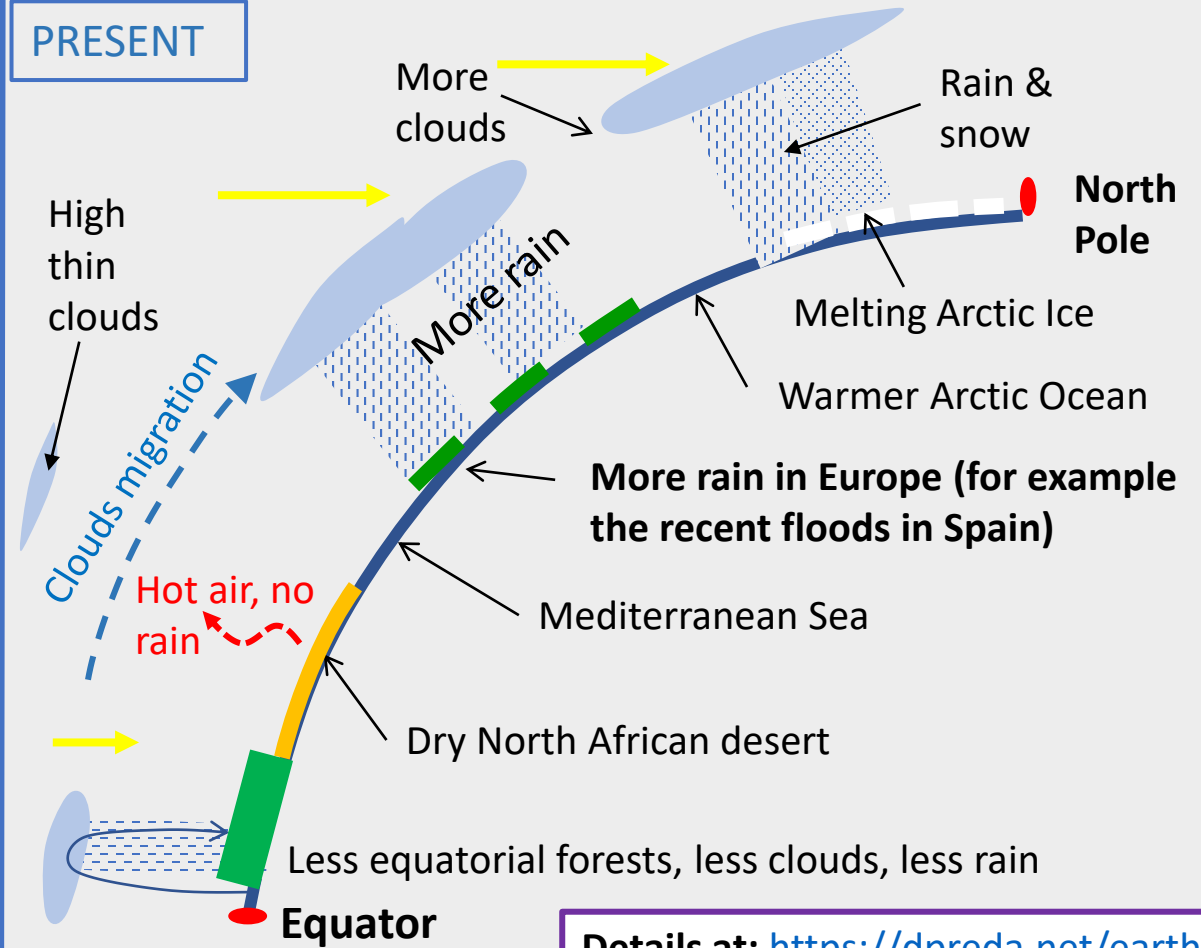
The thinner and coarser present soils hold less water, leading to sea level rise together with the land ice melting and the other water [25].



BEFORE HUMANS



PRESENT



Details at: <https://dpreda.net/earth/>

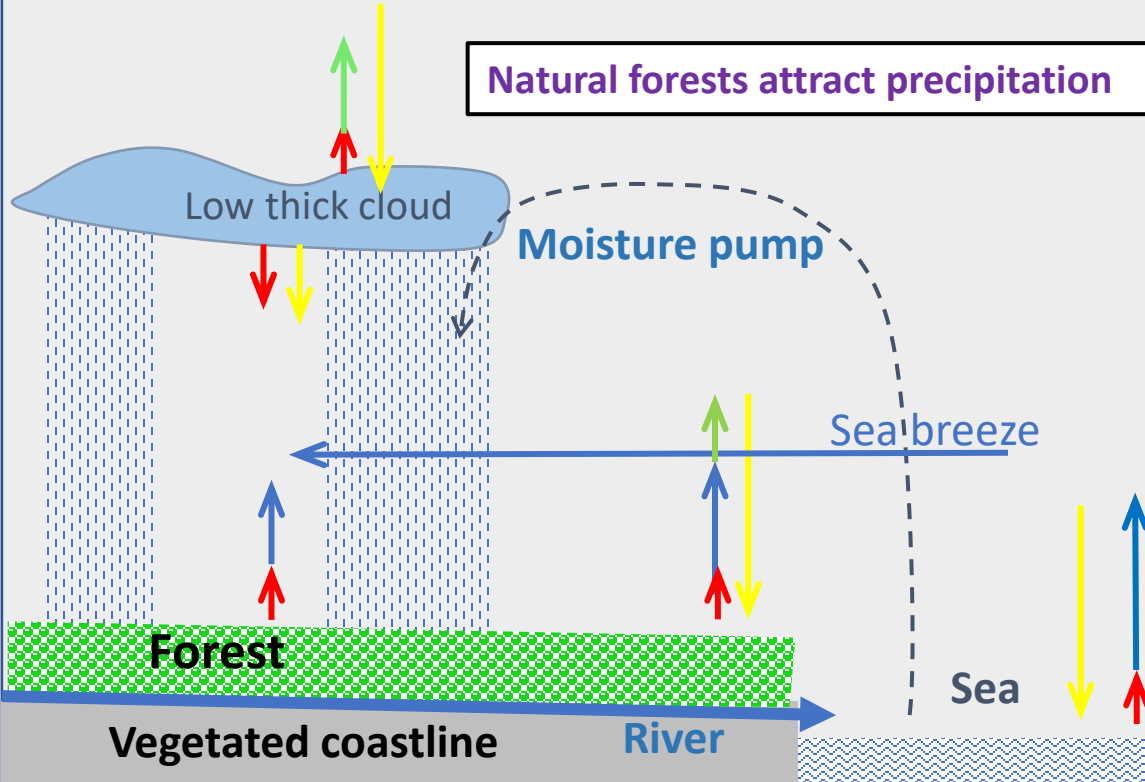
- The African equatorial forests were larger and wetter.
- Sahara had lakes, forests, elephants, crocodiles, thus wet climate.
- More clouds in the low latitudes meant less solar radiation on Earth.
- Most tropical ocean vapours condensed in the low latitudes.
- Less clouds, precipitation and heat reached the higher latitudes.
- Colder air, clearer sky and more snow than rain kept the Arctic frozen.

- North African forests were cleared out for pastures and crops.
- Lack of forest evaporation decreased clouds & increased insolation
- The Sahara desert has stabilised due to Roman agriculture.
- Less vapours of the tropical ocean can condense in the hot Africa.
- Tropical ocean vapours now overheat and flood higher latitudes.
- The dryness is not global on same latitude, thus it is man-made.

- SR ← Solar radiation
- R ← Reflection
- E ← Evaporation
- IR ← Infrared radiation
- AH ← Air heating

BEFORE HUMANS

Natural forests attract precipitation

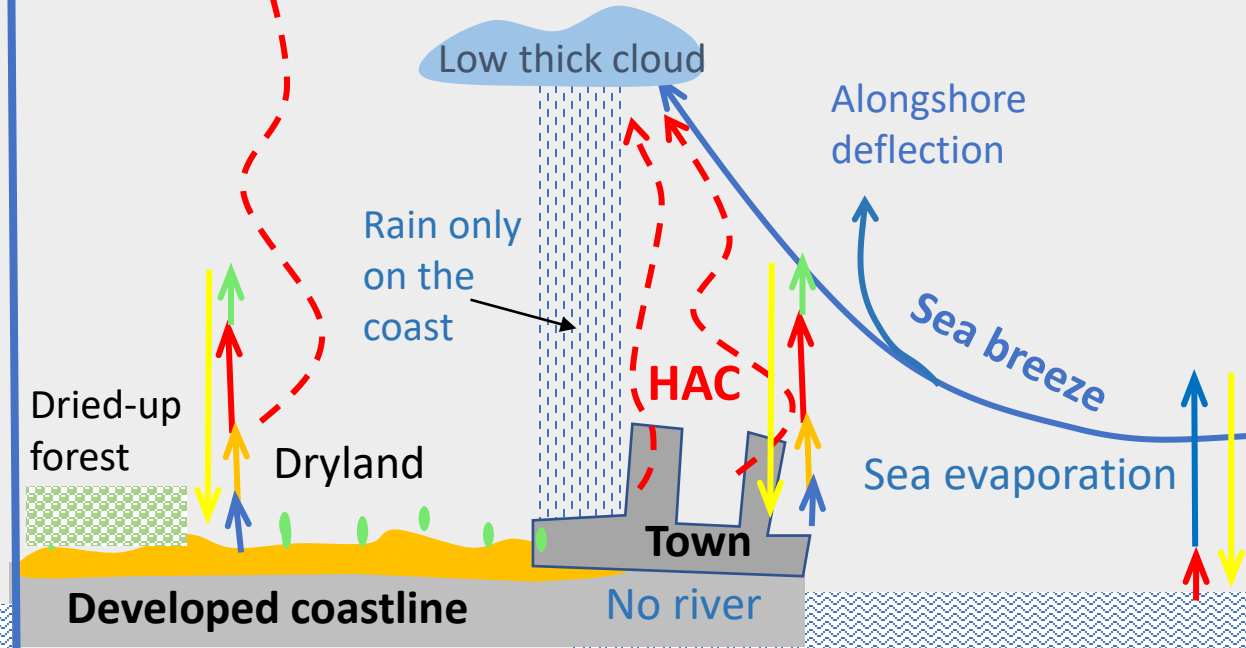


PRESENT

High thin clouds = global warming

Thermals create warming clouds

Coastal deforestation produces inland drought



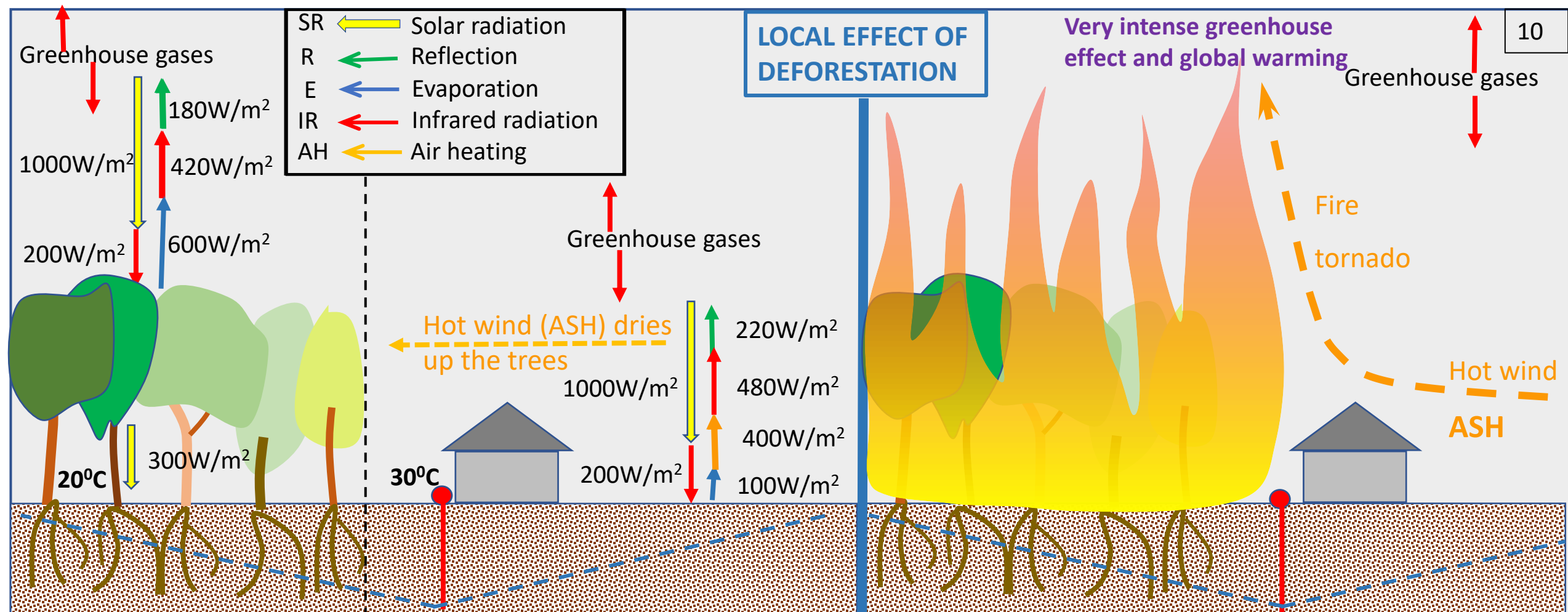
All coastlines were initially covered with forests that attracted marine humidity through “ biotic or moisture pumps” [27], [25] and pressure differential. They favoured regular rain that fed the forests and created rivers from their excess precipitation/evaporation. **There would be no water on land if precipitation would not be induced. Locally, only dense tall vegetation and mountains induce precipitation on land.**

When coasts are deforested, they overheat the air that raises in strong thermals, creating a **hot air curtain (HAC) that stops marine humidity from reaching the inlands, which this way dry out.** The sea breeze is either deviated alongshore to higher latitudes, or pushed upwards to reach its precipitation height and create excessive coastal rain. Water that naturally would evenly feed the inlands is now **flooding the coasts.**

- SR ← Solar radiation
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LOCAL EFFECT OF
DEFORESTATION

Very intense greenhouse
effect and global warming



Most solar energy in a forest is used to evaporate water, so there is no solar air heating and the temperature in the forest is much lower than above bare ground, despite trees reflect less solar radiation than bare ground.

Deforestation decreases water evaporation, thus solar energy overheats the lower troposphere. **As above, local deforestation warming may be 460W/m² (therefore tens of W/m² globally), while carbon warming is 2W/m², or 5W/m² including water feedback**

Deforestation warming is thus much larger than man-made carbon gases warming.

Sunshine overheats the land and produces an avalanche solar heated (ASH) wind. The ASH takes heat from the ground and from the dried up vegetation in its path, creating more air heating which dries new vegetation at its front. ASH dries up the trees around forest clearances, especially if the groundwater is extracted with pumps from tree roots area. This way, trees transform into fuel.

When ignited, the dry trees burn violently.

As seen on page 5 above, total deforestation for pastures and crop fields leads to rapid soil decay, erosion and desertification (page 6). Some people wanted to live in forest clearances (page 10), leading to intense forest and house fires as those in Europe, Australia and now America.

The January 2025 Los Angeles fires had the following causes:

1. Like the prehistoric burning for North Africa's antelopes [24], the cultural burning for Bisons [30] has turned the Nevada forest and its lake landscape into a desert [31]. Similarly, the pine forests of Sierra Nevada and Cascade Ranges were cleared out [32] for human interests [33], those areas becoming solar air heaters for the hot ASH winds. The Santa Ana wind heats up by 13°C when descending 2000m, and overheats due to above quoted **deforestation which also caused air to be very dry**. Therefore, the main cause of the damaging winds is the Central and West USA deforestation. The heating power of deforestation may be half of solar radiation, therefore 3500MJ/m^2 per year. All energy used by world humans is $6 \times 10^{14}\text{MJ/year}$, and can be produced through deforestation of $200,000\text{km}^2$ (2/3 of Nevada state). **This huge power is the reason for which we can decrease ground heat only by evaporating water to send that heat to upper atmosphere and space.**
2. Pacific coast deforestation has produced HACs which stopped ocean humidity reaching the inlands, slowly drying coastal vegetation.
3. Traditional use of flammable materials for buildings.
4. Wells and extraction of groundwater dried the nearby trees.
5. Improper prevention measures and protection against diverse sources of ignition.

Method of prevention/protection of houses against fires:

- Use only non-flammable building materials.
- Each house should have an always full 10 ton water tank and sprinklers actuated by 12V pumps and batteries, independent from the grid.

NATURAL VERSUS MAN-CHANGED FORESTS

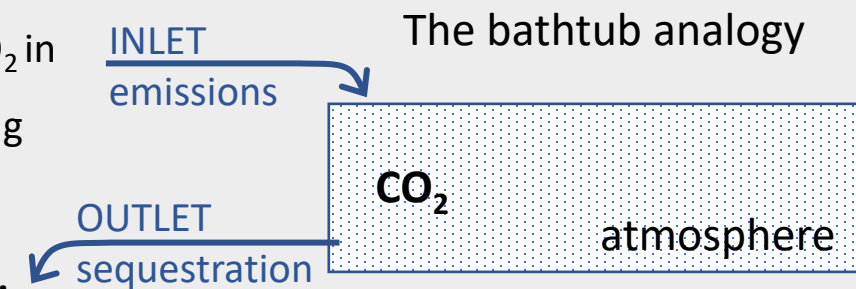
Wet natural forests cannot burn; their ground has a thick cover of moist decaying vegetation that creates soil and is pierced by many young tree shoots, small plants and bush which stop solar radiation and wind from drying up the ground. This mulch, well-known from gardening practice, is what keeps the soil and the natural forest moist, cool and alive. **Moist forests attract clouds and precipitation, in a lively feedback.**

Thinning the forest allows sunshine and wind to dry out the trees. Clearing the forest floor and repeatedly burning it with controlled burns allows solar radiation to dry up the soil that is gradually eroded, leaving the large trees with no support. This human action transformed wet, dense forests into bare lands that have no other function but to create global warming. **Dry lands repel clouds and precipitation, in a deadly feedback.**

- Firstly, we have to remember that global warming is the increase in the above-ground air temperature at the meteorological stations.
- Heatwaves are due to deforestation decreasing ground evaporation, tree and cloud cover. They are amplified by the greenhouse effect.
- Droughts are produced through the land-atmosphere feedback of deforestation, that is further amplified by the HAC and ASH effects.
- Tornadoes are generated in certain atmospheric circulation by the hot ground air of deforestation. Tornadoes do not happen in forests.
- Floods are due to the raised partial pressure of water vapours due to deforestation reducing precipitation areas.
- Sea level is raised by the melted land ice, eroded soils, land water loss due to deforestation and artificial groundwater extraction.
- Forest mega-fires are due to HAC, to forest thinning (that increases sunshine, wind and dryness), to ground clearing of thick wet residues, to the groundwater extraction from tree root area, to controlled and cultural burns, and to many points of ignition at the right time.
- **Since climate change symptoms are due to imbalances of water and vegetation, we can restore the climate through water and vegetation.**

THE PROPER METHOD OF CARBON DIOXIDE REDUCTION

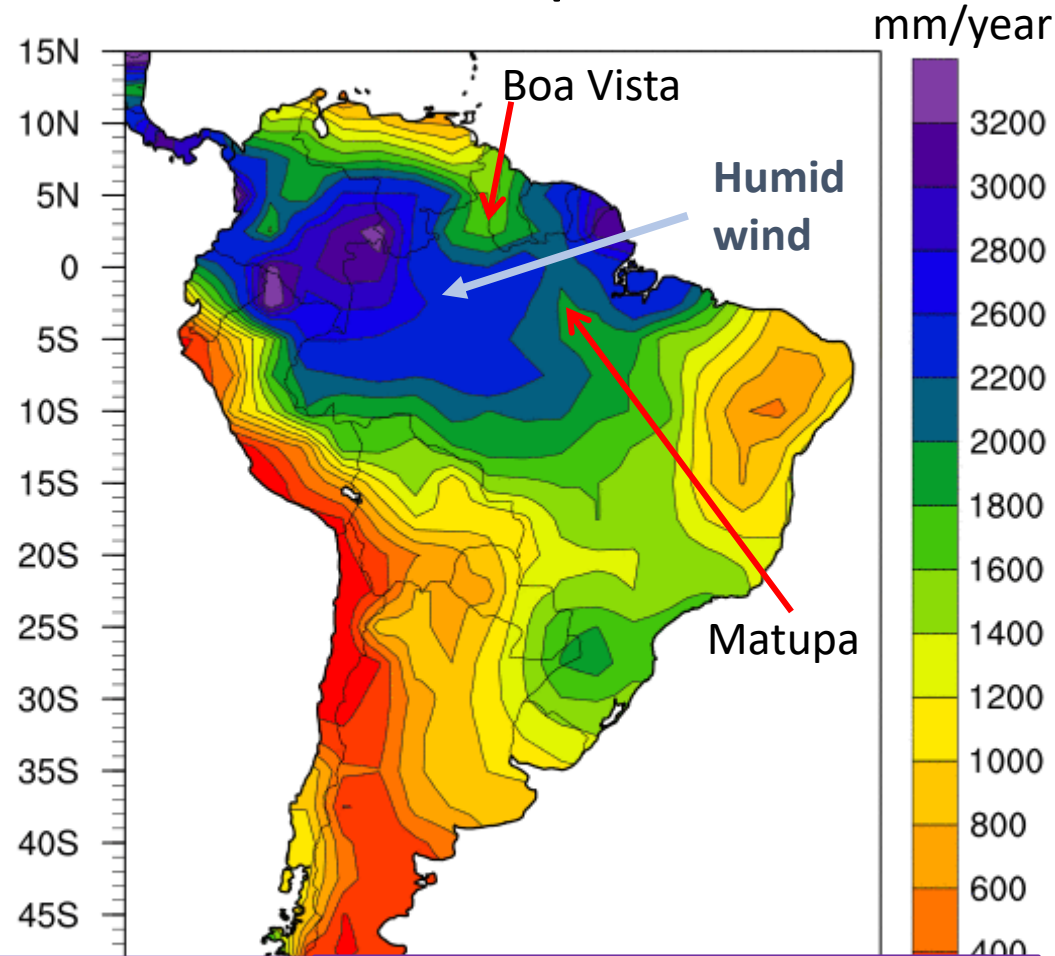
As shown on the right, reducing carbon emissions cannot decrease the current quantity of CO₂ in the atmosphere. To reduce the greenhouse effect we must extract CO₂ for example by planting new trees, as ocean sequestration alone is not sufficient. **Therefore, tree sequestration is the appropriate method for CO₂ reduction, and it can be accelerated by reducing CO₂ emissions.**



Deforestation



Precipitation



The southern part was almost totally deforested since the European colonization to make room for cattle ranches and mainly soybean crops, but the northern part remained intact and green until 100 years ago.

Unfortunately, deforestation of Amazonia is now accelerating for development purposes because most climatologists state that deforestation would cool climate through albedo [26] and would also increase precipitation [28].

In reality, deforestation does not increase, but decreases precipitation.

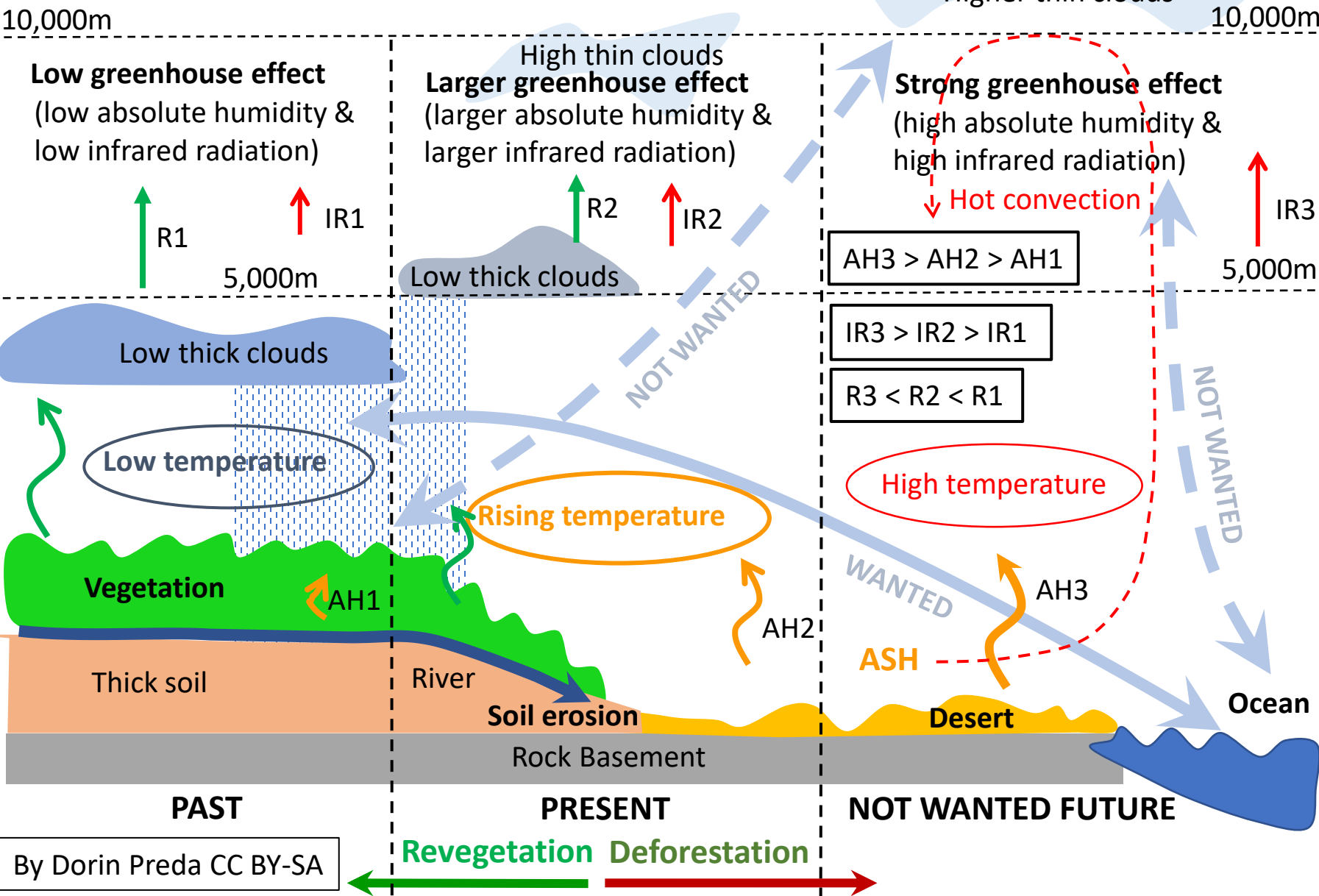
When the two lines of deforestation (Boa Vista and Matupa) will meet, they will create a hot air curtain (HAC) that will stop the incoming humid Atlantic wind reaching the interior of the continent and will dry it out. The oceanic moisture has already started flooding other places, while the Amazon dries out.

Deforestation decreases precipitation and stops oceanic humidity from reaching Amazonia. All those oceanic vapours have to condense in other regions, flooding them.

Deforestation also happens in Central Africa, Asia and other intertropical areas, thus the problem is global.

Therefore, it is urgent to stop deforestation and start revegetation at low latitudes.

Greenhouse effect = infrared radiation x greenhouse gases
If infrared radiation is low, the greenhouse effect is low
If greenhouse gases are low, the greenhouse effect is low



WRONG OPPOSITION TO REVEGETATION

Carbon climatologists incorrectly argue against revegetation, claiming that it would increase humidity, therefore the greenhouse effect and global warming.

In fact, the greenhouse effect does not depend on the relative, but on the absolute humidity, that may be lower in a cold forest than in a hot desert [25].

Present deforestation has raised the IR, air temperature and evaporation, decreased and elevated the low thick clouds, thus increased the greenhouse effect. More high thin clouds were formed, increasing global warming.

If deforestation continues, continents will become drylands because the overheated ground will stop low thick cloud formation and precipitation, and will create only high thin clouds that produce intense global warming.

Therefore, it is urgent to begin Earth revegetation with dense trees, in order to increase low thick clouds, and avoid creating high thin clouds.

MORE WRONG OPPOSITION TO REVEGETATION

Carbon climatologists oppose reforestation arguing that it would exacerbate global warming and turn forests into carbon sources if trees were to decay, making the situation worse than it is. This notion is clearly flawed, as trees cannot emit more carbon than they have absorbed.

Unfortunately, many of these logical inconsistencies wrongly influence the IPCC.

Immoral interests lead to opposing and burning forests.



Another flawed argument is that carbon dioxide absorption would decrease as CO_2 levels increase to a point where photosynthesis becomes saturated. In reality, photosynthesis continues to increase to double the present levels of CO_2 . Another incorrect argument is that afforestation should not be used to convert grasslands and savannas, ignoring that most of them are results of prehistoric deforestation, so we actually restore.

Opposing revegetation and natural water cooling while pushing only for carbon emission reductions, carbon climatologists inadvertently damage the water cycle, resulting in global warming and climate change.

Another detrimental decision, in addition to opposing reforestation, revegetation with useful trees and natural water cooling, would be to implement damaging geoengineering methods for climate intervention. **These methods are the most harmful for our planet.**

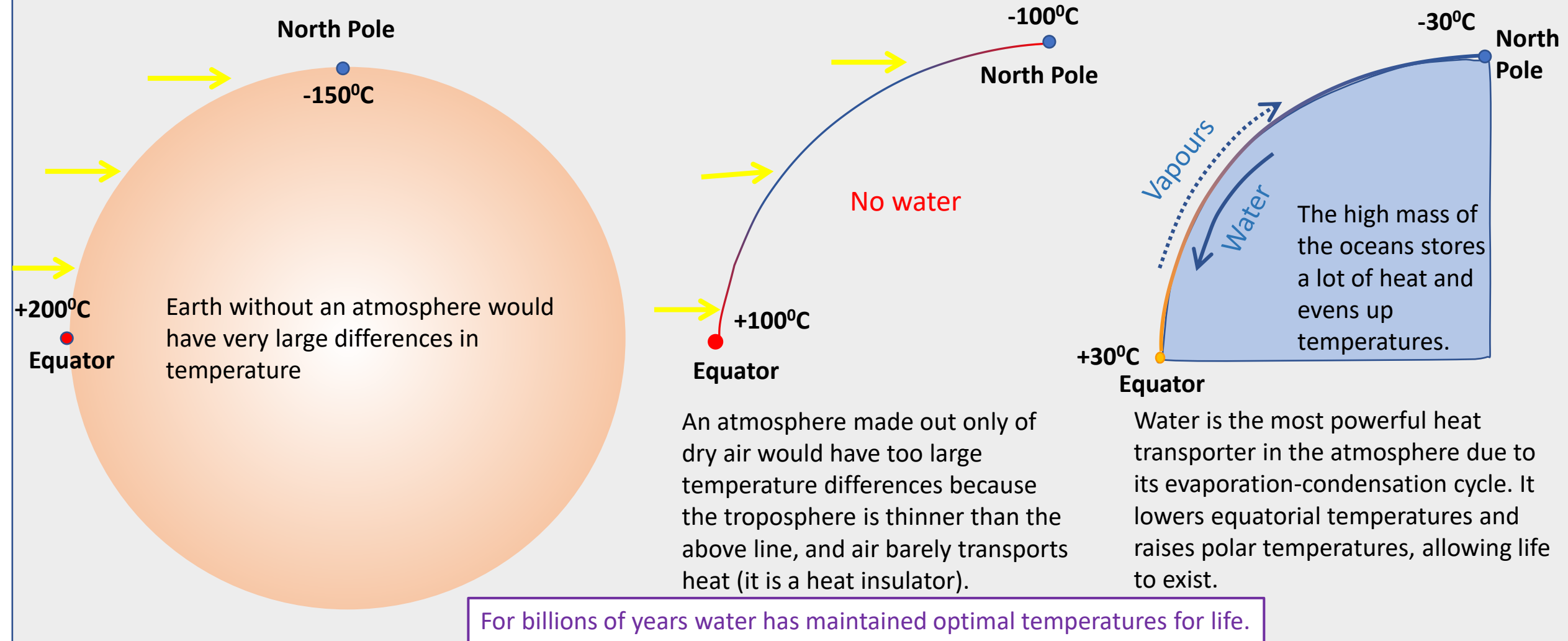
Repeatedly injecting harmful substances into the atmosphere under the guise of protection, will not fix the climate, rather would worsen it by increasing the changes. **To restore the climate, we must reduce the changes we have made to the planet, not exacerbate them.**



The damage from geoengineering to Earth and human society would be irreparable.

By Dorin Preda CC BY-SA

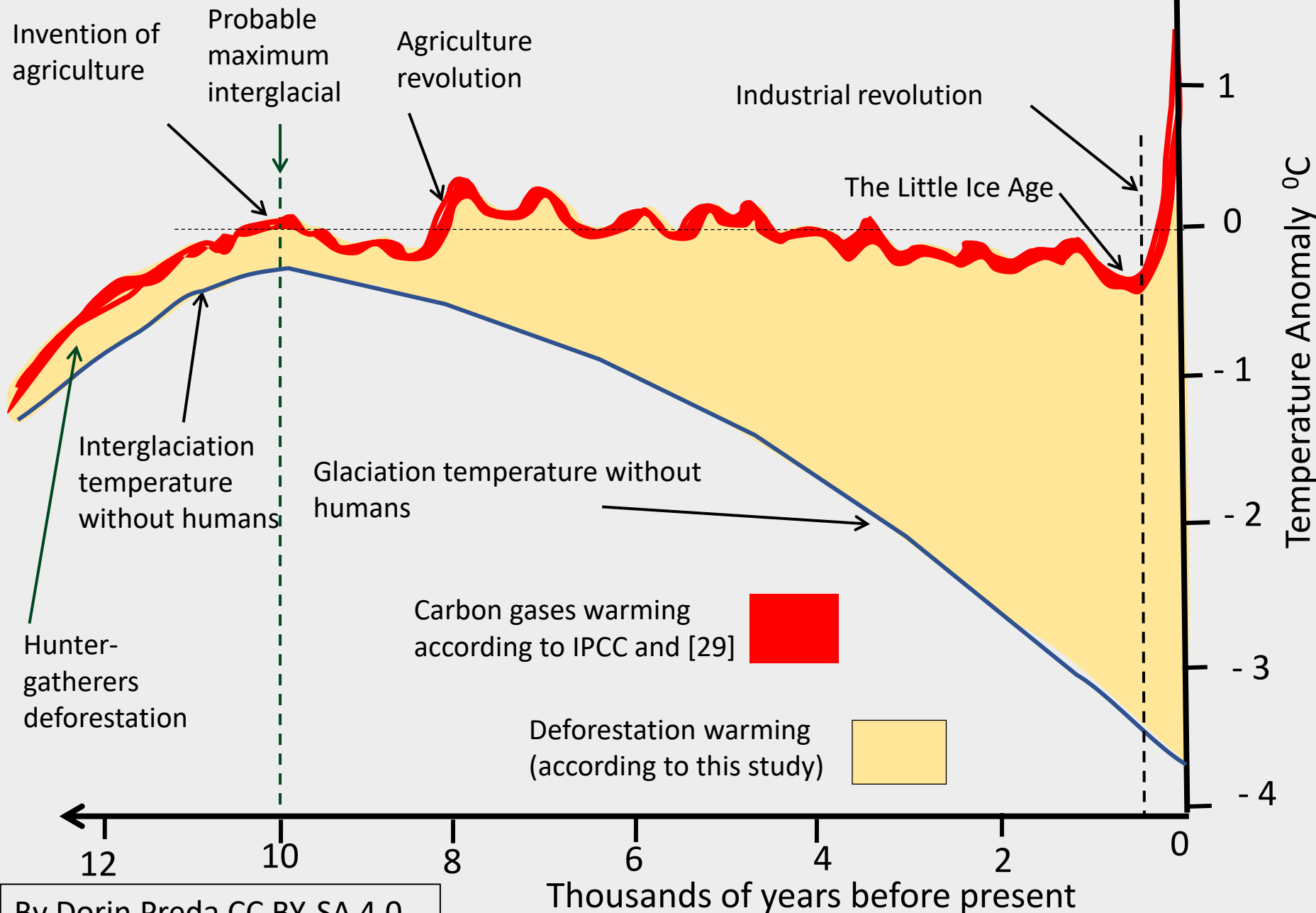
- Man-made climate change is real because the climate is connected to Earth's surface, which has been significantly altered by humans.
 - Deforestation since prehistory resulted in most present day savannas and prairies, while repeated fires resulted in most deserts.
 - Extensive deforestation for crop fields and pastures up to the present day has disrupted the water cycle, resulting in climate change.
 - Soil degradation from agriculture, especially tilling, leads to desertification, while the eroded soil contributes to raising sea levels.
 - The recent carbon dioxide increase is amplifying the greenhouse effect which is driven by the much larger infrared radiation of deforestation.
- Coastal deforestation creates damaging HACs that produce the global warming high thin clouds, coastal floods and inland droughts.
 - Marine humidity stopped by HAC to discharge into the intertropical lands is pushed to higher latitudes, overheating and flooding them.
- Only water can decrease the solar warming of deforestation (tens of W/m^2), which is much larger than the man-made CO_2 warming (W/m^2).
 - Through groundwater evaporation, vegetation decreases the above ground air temperature, which is the benchmark of global warming.
 - The single realistic tool for climate restoration is water; the solution is the revegetation that evaporates groundwater and attracts clouds.
 - Trees are also the easiest way to sequester carbon dioxide from atmosphere, as a bonus to reducing global warming and climate change.
- We cannot fully reforest the Earth because we need the land for human purposes, especially for settlements and food production.
 - Most coastal areas are already permanently occupied by our global warming settlements, which dry out the inlands through their HACs.
- **The solution is to revegetate with useful (mostly fruit) trees that restore climate, recreate soils, capture CO_2 and provide produce.**
 - **To stop the HACs of urban areas, we can increase their vegetation and compensate to the needed cooling with artificial evaporation.**



Useful trees are the most economical and comprehensive solution, because they promote rainfall through their organic aerosols, create new soils with their roots and litter, provide shade, extract and properly evaporate groundwater, sequester carbon and produce useful resources.

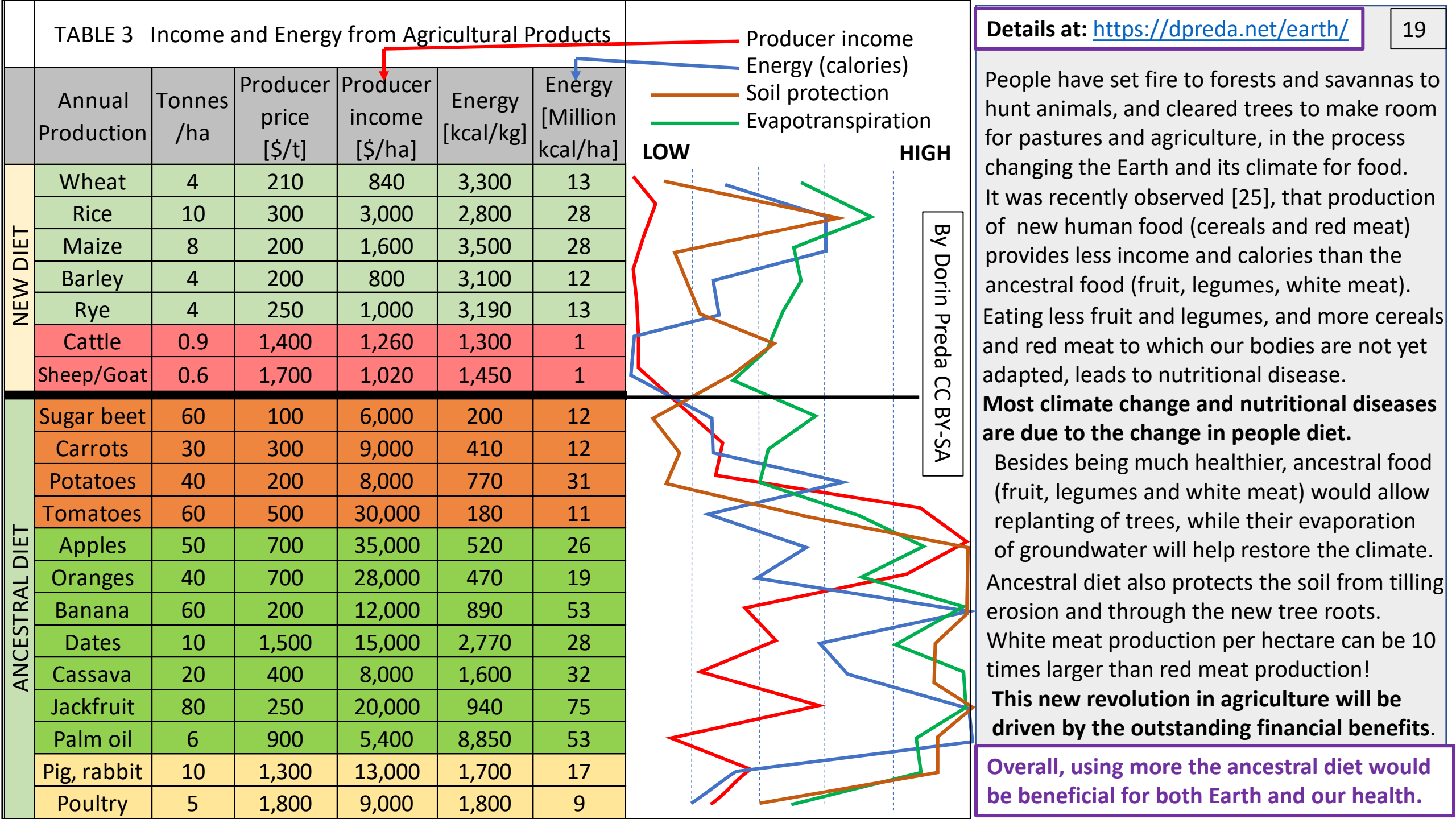
INFERRED HUMAN-INDUCED GLOBAL WARMING

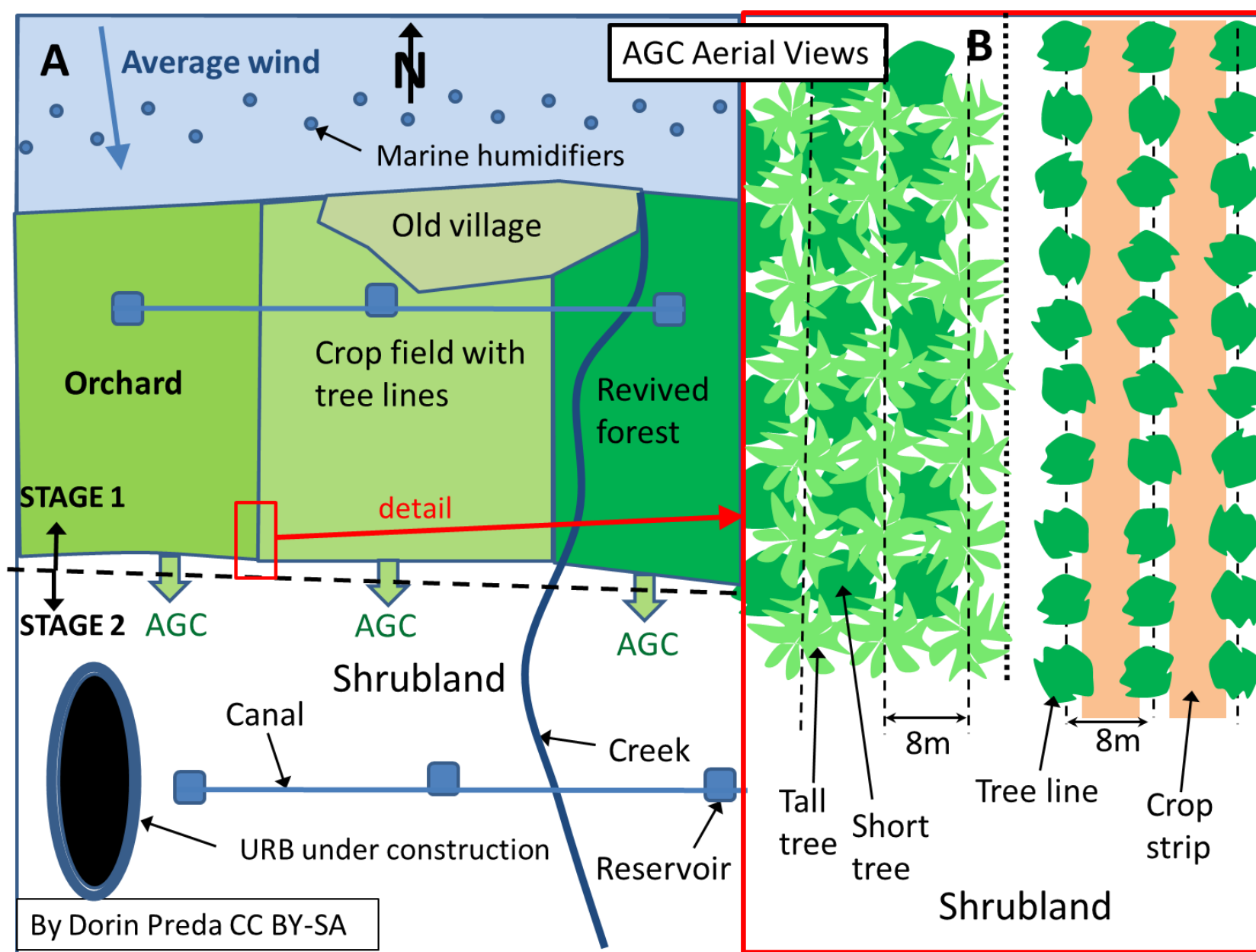
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The diagram adapted from [24] shows that, without humans, a glaciation might have started about 10,000 years ago. At present, temperatures would be around 4 degrees Celsius lower. However, due to deforestation, the climate warmed up gradually in the past thousands of years, more after the agriculture revolution about 8,000 years ago. The sharpest temperature increase happened in the past 250 of years, since the industrial revolution, due to mechanical deforestation and increased carbon gases emissions. **The global warming of deforestation was initially recorded; subsequently it was subtracted as the correction for the “urban heat island effect”.**

This confirms the possibility of using vegetation and water to restore the climate, with carbon emissions reductions potentially adding to the benefits.





Success keys: AGC size, startup line setup, tree density, groundwater, etc. **Finding out the power** needed for climate repair: the source of energy is solar radiation; at mid-latitudes the daily average is 15MJ/m^2 . Under 65% reflecting clouds and thick forest cover it may drop to 1MJ/m^2 , meaning that the maximum average to compensate for is 14 MJ/m^2 , or 10 MJ/m^2 after accounting for reflection. That is sufficient to evaporate around 1,500mm of water per year and is the evapotranspiration of a mature orchard that can compensate for the increase in solar radiation due to past deforestation.

It results that dense, mature orchards are needed to cool the climate where previously there were natural forests. At low latitudes the orchards should preferably also have ground plants or tree canopies on 2 levels.

The Avalanche Greening and Cooling (AGC) is the land restoration that may self-propagate. It involves a network of water reservoirs and canals that store and distribute freshwater for the dense orchards, useful tree plantations and restored conservation forests of high evaporation.

1. Restoring evapotranspiration and precipitation in intertropical areas through planting useful trees transforms drylands into valuable land.
2. As intertropical sea evaporation returns as rain to intertropical lands, the heating and flooding of higher latitudes will cease.
3. Increasing evapotranspiration in settlements with trees, green canopies and evaporative cooling, will cool them and prevent HACs and ASHs.
4. More vegetation on land means more low thick clouds that reflect more solar radiation, reducing the planetary temperature.
5. Cooling the high latitudes will re-freeze them (the Arctic, permafrost, glaciers), reversing sea level rise.
6. Re-greening the land will retain more water on continents in vegetation, ground cover and as groundwater, reversing sea-level rise.
7. As the climate improves by restoring the water cycle and sequestering CO₂ in trees and soil, carbon emission reductions become a bonus.
8. Wetter, larger vegetation on land and private property of useful trees (the majority of vegetation) will prevent forest fires.
9. Replacing most pastures and crop fields with orchards and other useful tree plantations would greatly increase income and land value.
10. Lines of useful trees in the remaining pastures and crop fields would boost productivity, prevent soil degradation and retain land water.
11. Transitioning from a red meat diet to a white meat diet would enhance people's health and greatly increase meat production per hectare.
12. Replacing Amazonian deforestation with large-scale land rehabilitation (AGC) in Africa and Australia would re-balance the global climate.
13. Compact city style URBs can accommodate the needs of about 20,000 inhabitants who work for the rehabilitation of the surrounding land.
14. All sectors of the economy can benefit from engaging in this large developmental program, contrary to the austerity of emissions reduction.
15. The climate can be naturally repaired through revegetation without the dangerous additional changes of geoengineering.
16. The present socio-economic tensions due to climate change would dissipate because all parties would co-operate for mutual benefit.
17. Setting up all the needed Natural Reserves allows properly planned development on the rest of the land.

ANNEX 1: ABOUT THE AUTHOR

Mr Dorin Preda

<https://dpreda.net/>

Email: [dorin\[AT\]dpreda.net](mailto:dorin@dpreda.net)

Qualifications: Earth sciences engineer 1982

Worked in two scientific research institutes: Eco-Geo-Marine
Meteorology-Hydrology

Self-employed for 23 years in a solar thermal business; retired in 2024

Author of:

- Many renewable energy designs, prototypes and pilot installations
- A new solar air heating technology with applications in industry and agriculture
- A few patents of invention on heat transfer systems and solar thermal devices
- **A study and book on climate change "Restoring Climate"** <https://dpreda.net/earth/> that supports this presentation.

Passionate for:

- Desciphering Physics (the interface between real phenomena and human understanding)
- Creating correct information and balanced solutions for real protection of the environment and rational economic development.

Believes that:

- The first requirement for a scientist is the high moral standing
- Thus, the author has made in 2020 the first edition of his book freely available to all scientists and authorities (but was ignored).
- Open, correct scientific debate and dissemination of information should be allowed and supported for climate recovery.

ANNEX 2: SOME PEOPLE WRONGLY DENY THE MAN-MADE CLIMATE CHANGE

Correct

Partially correct [Reference]

Incorrect

- **That there would be no man-made climate change:** Wrong, because our large land changes induce large reaction changes.
- **That it was climate change before humans [5]:** The man-made changes are more rapid and on other directions.
- **That the solar factor would be much stronger than CO₂ [6]:** Wrong, how comes it coincided with largest human activity?
- **The CO₂ saturation effect would diminish the role of additional CO₂ [7]:** Partially wrong, as demonstrated by planet Venus.
- **Cosmic rays would influence cloud formation, not humans [8]:** Not supported by the spatial and temporal cloud distribution
- **The Pacific Southern Oscillation would be much stronger than CO₂ [9]:** Yes, but its cycle is much shorter than that of CO₂
- **Water has higher concentration and infrared absorbtion than CO₂ [10]:** Yes, but this does not mean that CO₂ has no effect
- **Most water evaporates from ocean, not due to humans [11]:** Yes, but human influence on water precipitation is significant
- **CO₂ absorption spectra overlaps with the water one [12]:** Yes, but only partially, as CO₂ also has its own window
- **Uncertainty due to water models imperfections [13]:** This uncertainty of modelling extends on all modelled parameters
- **Human influence on water evaporation would be negligible [14]:** Wrong, it is major on land, which is an important sector
- **Water has a short residency time in the atmosphere [15]:** Wrong, residency time has nothing to do with its climatic effects
- **Due to water, there would be lower climate sensitivity to CO₂ [16]:** Yes, but the CO₂ effect still exists even if it is weaker
- **Increased radiative cooling due to increased temperature [17]:** Yes, but the loss of heat before equilibrium is smaller
- **Could the cloud feedback create an iris thermostate? [18]:** Yes, luckily for the oceans, because land deforestation opposes it
- **Satellite observations support the iris hypothesis. [19]:** As above, but for it to act, an increase in temperature is necessary
- **There were climatic changes like the Little Ice Age without CO₂ cause [20]:** Yes, because of other causes like the pest, wars
- **Palaeoclimatic data show CO₂ being a follower of temperature [21]:** Yes, because of other causes like the vegetation effect
- **Historic temperature records are unreliable because of urban heat effect [22]:** Yes, because of increased deforestation
- **The CO₂ effect is small, while the climate change effects are large [23]:** Yes, because of large man-made vegetation changes.

Thus, the man-made climate change is real

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