

MANIFESTATIONS OF GEOPHYSICAL FACTORS ON HUMANS



**MEDICAL ACADEMY NAMED BY SI GEORGIEVSKIY
CFU NAMED BY V.I.VERANDSKIY**

DEPARTMENT OF MEDICAL BIOLOGY

- **1st course**
- **Riya Iomas**
- **Aditya bhaskar**
- **Group 192 b**

CONTENTS

- Influence of UV radiation on human health
- Influence of extreme temperature on human health
- Influence of wind and the diseases caused by when such as anthroponosis and I'm super nauseous in humans
- The manifestations of biorhythms seasonal and daily in humans
- Diseases and pathological conditions associated with impact of geophysical factors
- Natural disasters and the human consequences



Your results are back. It's climate change. Just how many greenhouse gases have you been consuming?

Farm to Table

The Potential Interactions of Rising CO₂ and Climate Change on Food Quality and Safety





GROUND GEOPHYSICAL SURVEY

- **In a Magnetics survey**, the Earth's magnetic field and the magnetic responses due to magnetic minerals are measured. Naturally magnetic minerals such as magnetite occur in rocks and in varying percentages.
- Other minerals have a *high magnetic susceptibility* resulting in induced fields. It is both the *remnant and induced* magnetic responses that are used to map an exploration area and calculate the susceptibility of rock types.
- Because of its speed, the ease of the physical measurement and its economy, **magnetics are** the most widely used and popular geophysical exploration method. From a detailed study of an anomaly, it is possible to calculate magnetic susceptibility, length, width, depth, dip, and the remnant magnetism of the causative body.

Types of Winds:

Global Winds

Trade Winds: blow towards the equator. Early merchants sailed from Europe to the Americas to TRADE.

Doldrums: low pressure at the equator with very little winds.

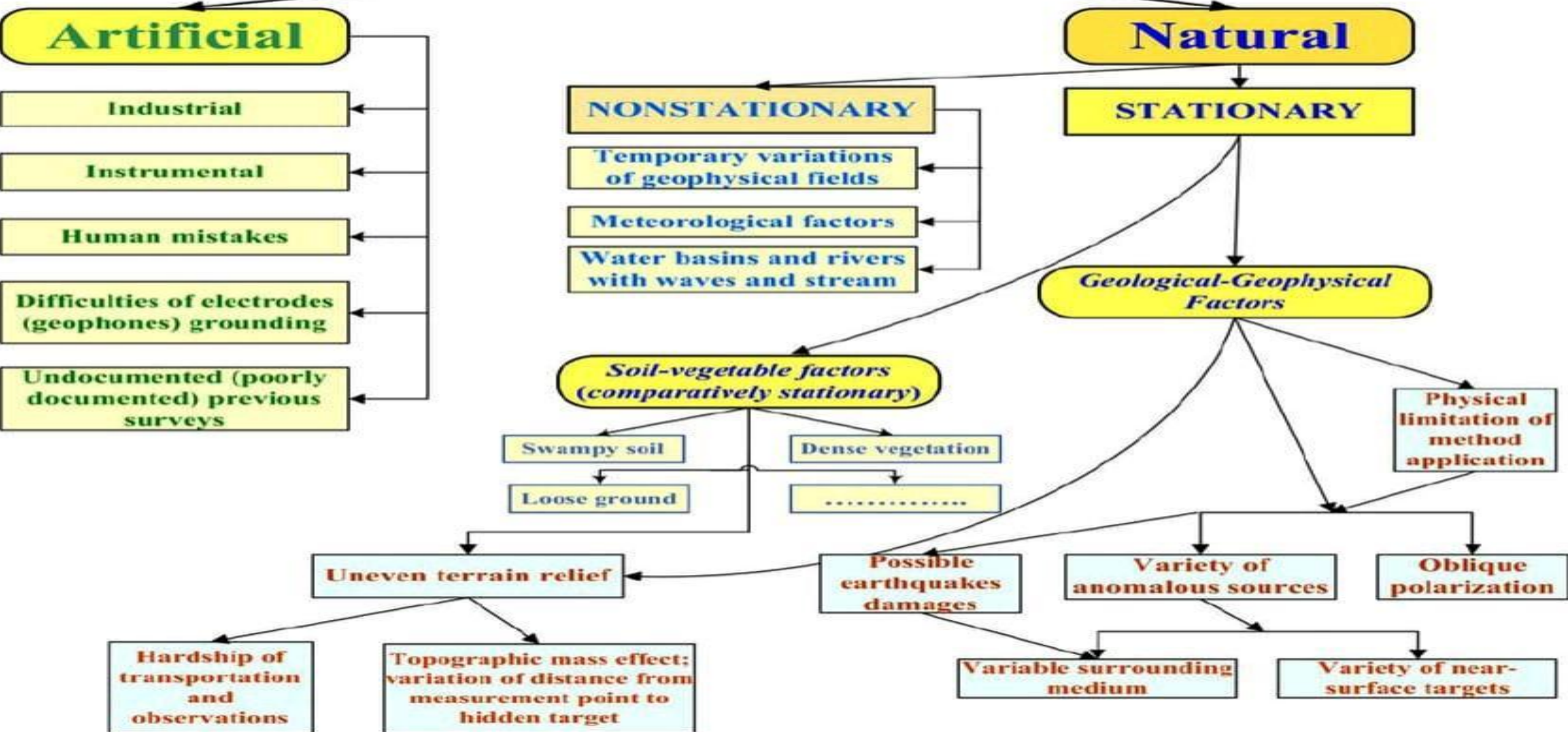
Horse Latitudes: areas of weak winds away from the equator. Trade ships used to get stuck in these winds and throw horses overboard to save water for the sailors.

Westerlies: wind belts at 30° and 60° latitude blowing opposite the trade winds often helped sailors return to Europe.

Polar Easterlies: wind belts near the poles formed from cold, sinking air moving away from the poles.

* Air moves from areas of HIGH PRESSURE to LOW PRESSURE

DISTURBANCES



UV - Ultraviolet C, B, A

1 Cornea



Photokeratitis – Sunburn of the cornea and conjunctiva due to excessive UV exposure :

→ Temporary symptoms include pain, intense tears, eyelid twitching, discomfort from bright light and constricted pupils

2 Crystalline Lens



Cataract – Clouding of eye's crystalline lens, typically progressing over time:

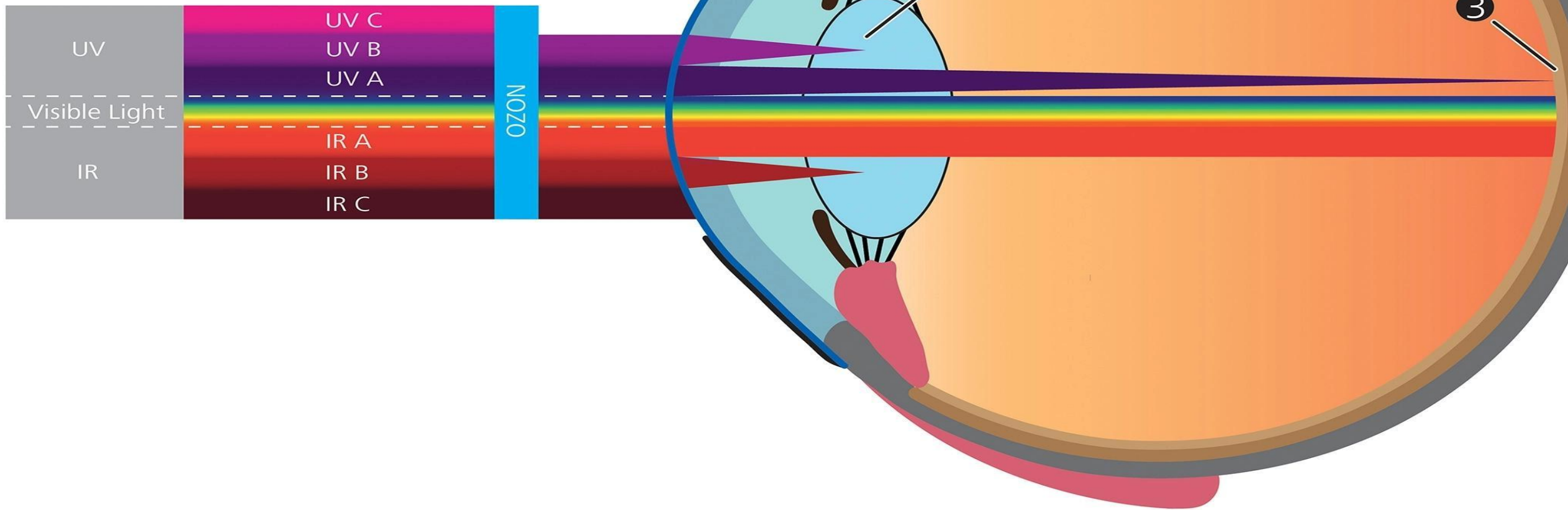
→ Decrease in vision, visual impairment, blindness

3 Retina



Macular Degeneration – Medical condition of damage to eye's retina:

→ Blurred vision, vision loss

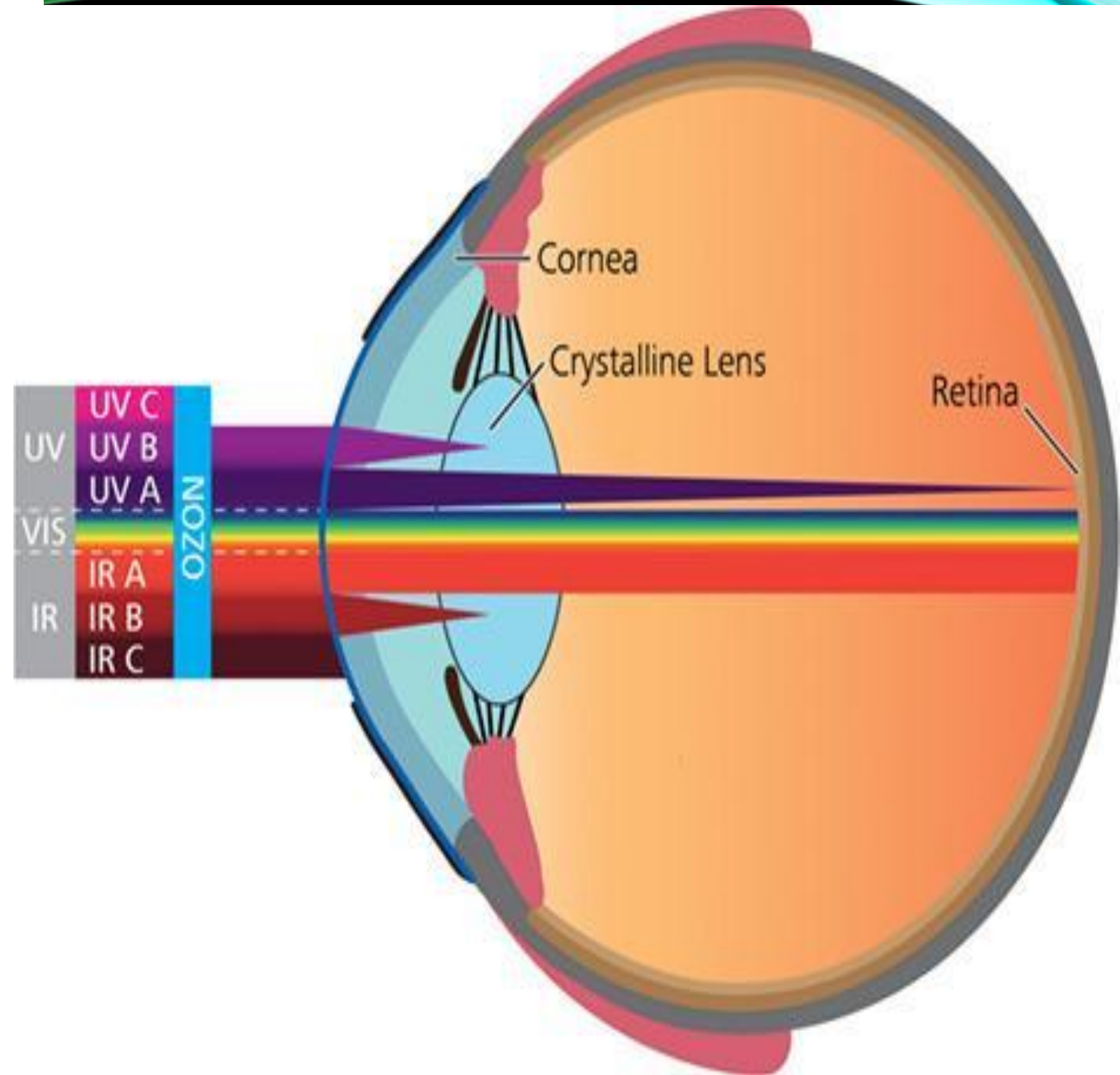


Effect (or) Environmental impact (or) consequences of Ozone Layer Depletion

■ As the ozone layer gets deteriorated the harmful UV rays will reach the ground and cause various adverse effects.

I. Effect on human health

- (i) The UV-rays damage genetic material in the skin cells which cause skin cancer.
- (ii) For the fair skinned people life long exposure to the high level radiation of UV rays increases the risk of non melanine skin cancer.



Biological Effects of UV Radiation

The consequences depend primarily on:

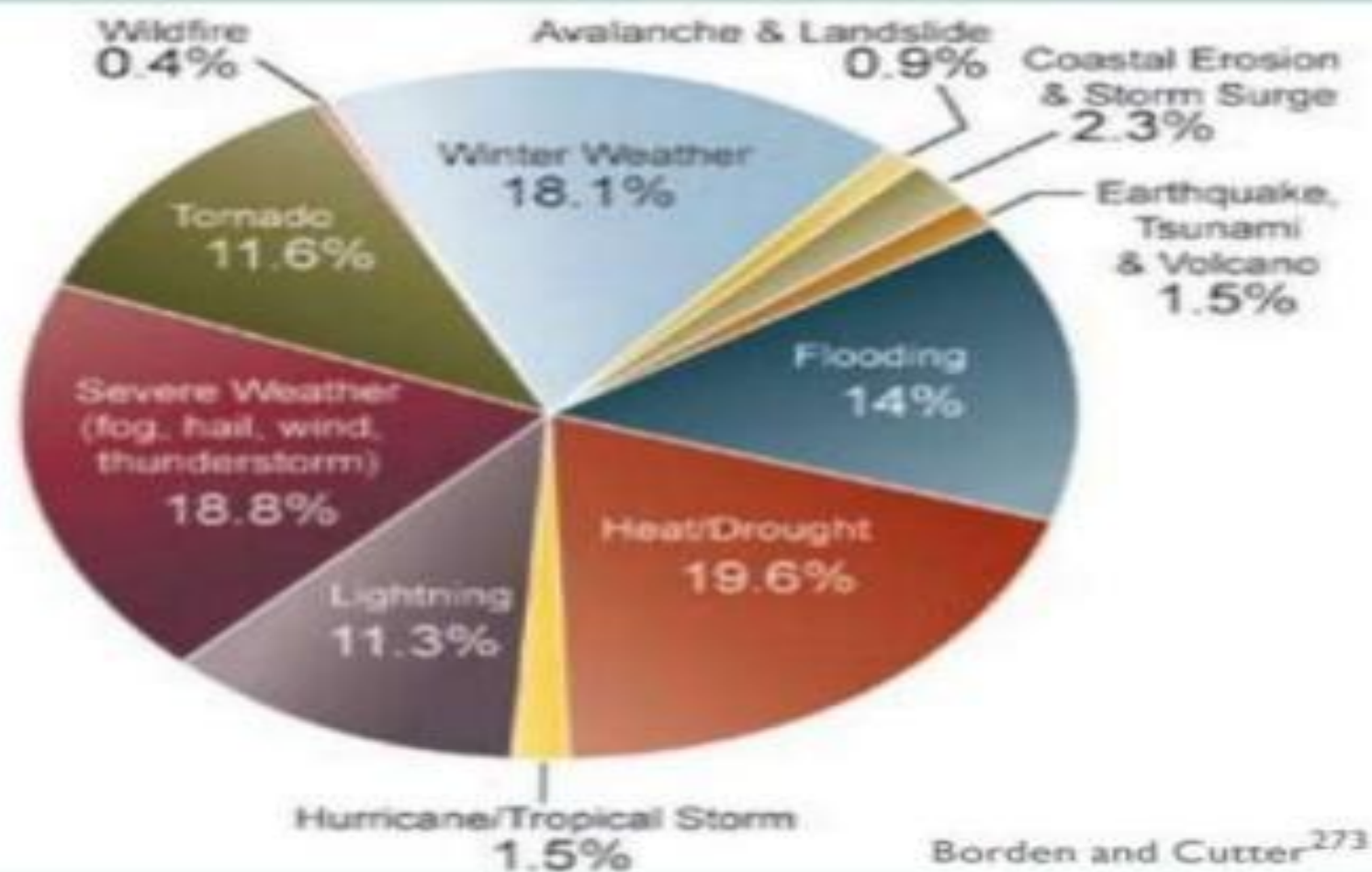
1. The energy associated with the radiation
2. The length of time of the exposure
3. The sensitivity of the organism to that radiation

The most deadly form of skin cancer, **melanoma**, is linked with the intensity of UV radiation and the latitude at which you live.

We need to change the way we interact with our environment

- There are lot of measures to be taken up to combat the impacts of global climate change, in the context of human health related issues.
- This paper highlights the effects of Global Climate Change on human health and the well-being of all life on earth and the strategies to be adopted to combat the effects on human health.

Hazard-Related Deaths in the U.S.



The pie chart shows the distribution of deaths for 11 hazard categories as a percent of the total 19,958 deaths due to these hazards from 1970 to 2004. Heat/drought ranks highest, followed by severe weather, which includes events with multiple causes such as lightning, wind, and rain.²⁷³ This



Weather Changes & Infections



- Fever is a part of Immune Mechanism to abolish the germs causing infection
- Fever Helps to kill Viruses & Bacteria by increasing the Temperature of the Body which is not favorable for the germs to grow.

NEGATIVE EFFECTS

A photograph of a wind farm on a beach. In the foreground, there is a sandy beach with waves crashing onto the shore. In the middle ground, a line of white wind turbines stretches across the landscape. In the background, there are blue mountains under a clear sky. The overall scene is a coastal wind farm.

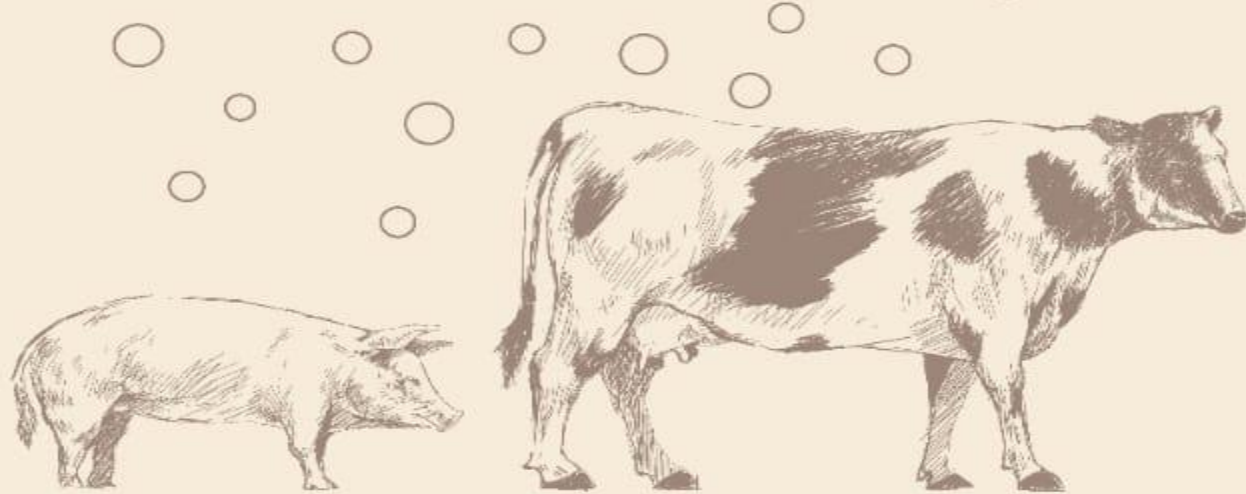
- Wind turbines are noisy
- Aren't very pleasing to look at
- The strength is not always constant and,
- Varies from zero to storm force.

HOW ZOOONOTIC DISEASES are transmitted



Vector-born disease

Air-born/water-born disease



Proximity
or
direct contact
to animals



Food-born





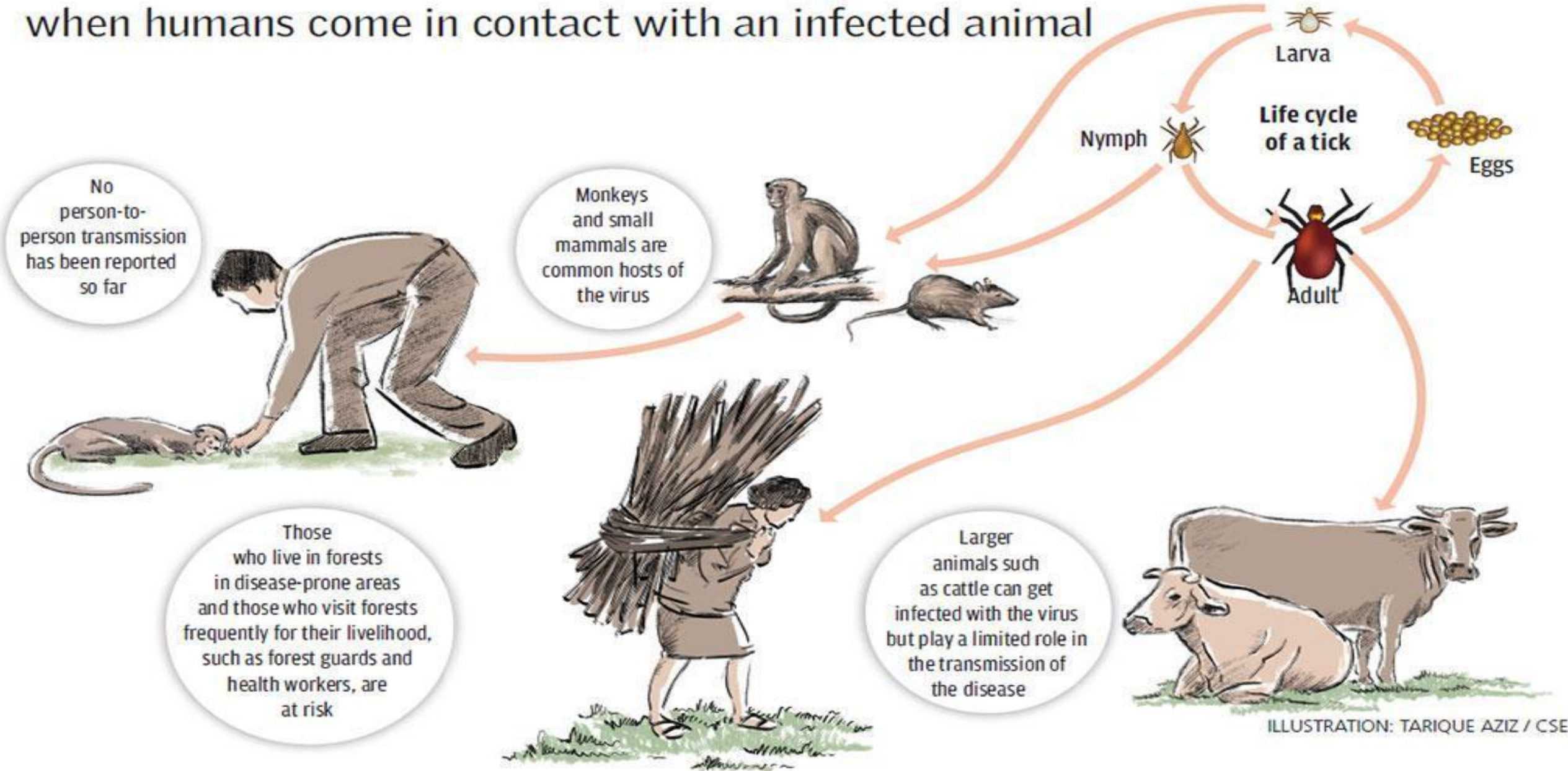
Weather Changes & Infections



- Cold
- Fevers
- Loose Motions
- Vomiting
- Joint Pains
- Skin Problems
- Eye Problems

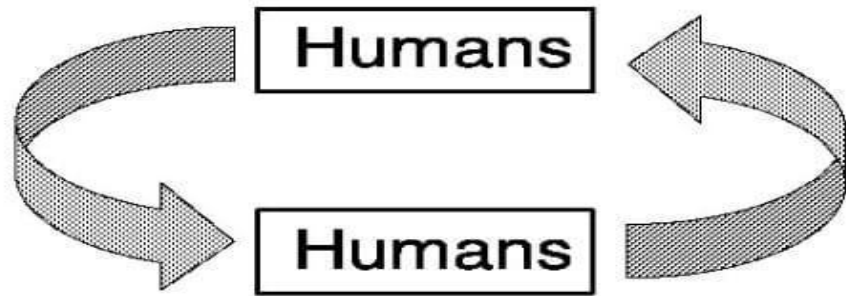
How humans contract Kyasanur forest disease

The virus is transmitted to humans through the bite of a tick or when humans come in contact with an infected animal

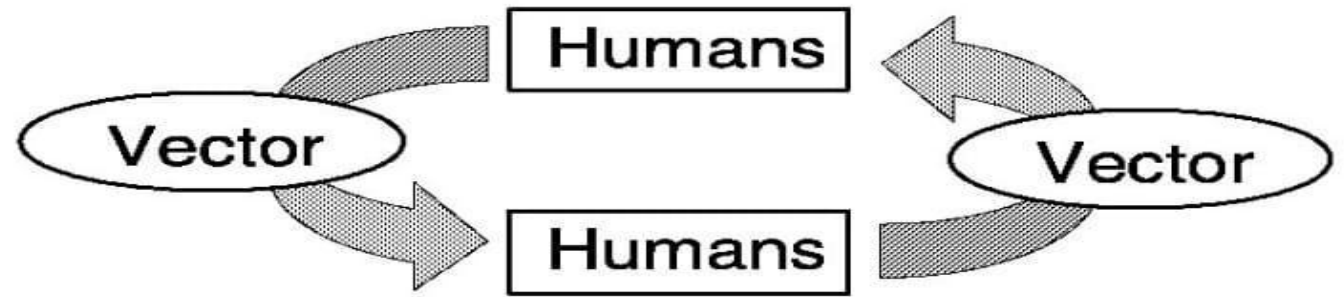


ANTHROPONOSES

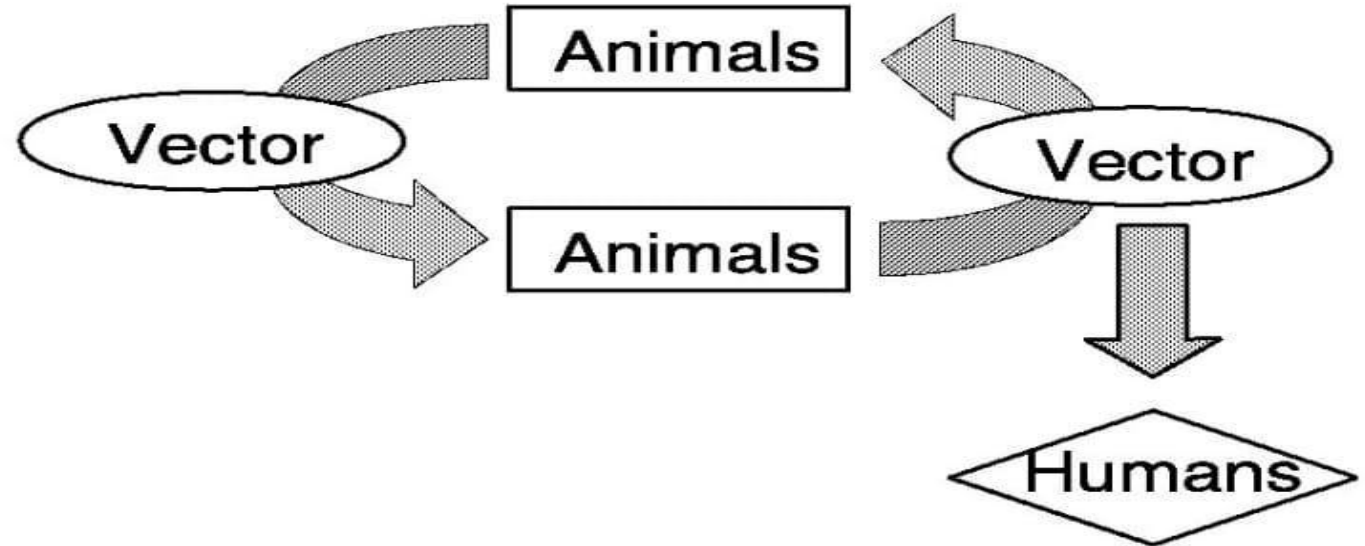
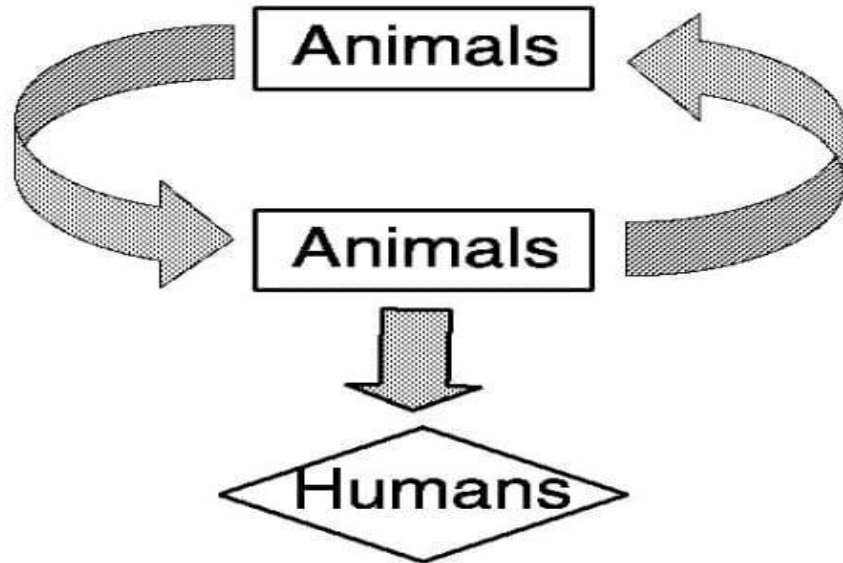
Direct Transmission



Indirect Transmission



ZOONOSES



Negative Impacts of Wind Power

Higher Initial Investment

- Turbines are expensive

- Wind power must compete with cheap/easy fossil fuels

Noise Pollution

- Noise is produced by the rotation of the turbine blades

Aesthetic Pollution

- Turbines are ugly relative to the natural view

Wildlife Mortalities

- Bird/bat deaths

Wind Unpredictability

- Too high/low can be detrimental to health of turbines and productivity

Regional

- Locations differ in wind amount/exposure

Safety Concerns

- Malfunctions: fire/ice



CLIMATE CHANGE

DIRECT EFFECTS

- ❖ Morphological changes
- ❖ Physiological changes
- ❖ Phenotypic changes
- ❖ **Plant productivity**

INDIRECT EFFECTS

- ❖ Soil fertility
- ❖ Irrigation availability
- ❖ Rise in sea level
- ❖ Pests
- ❖ **Heat/Flood/Drought**

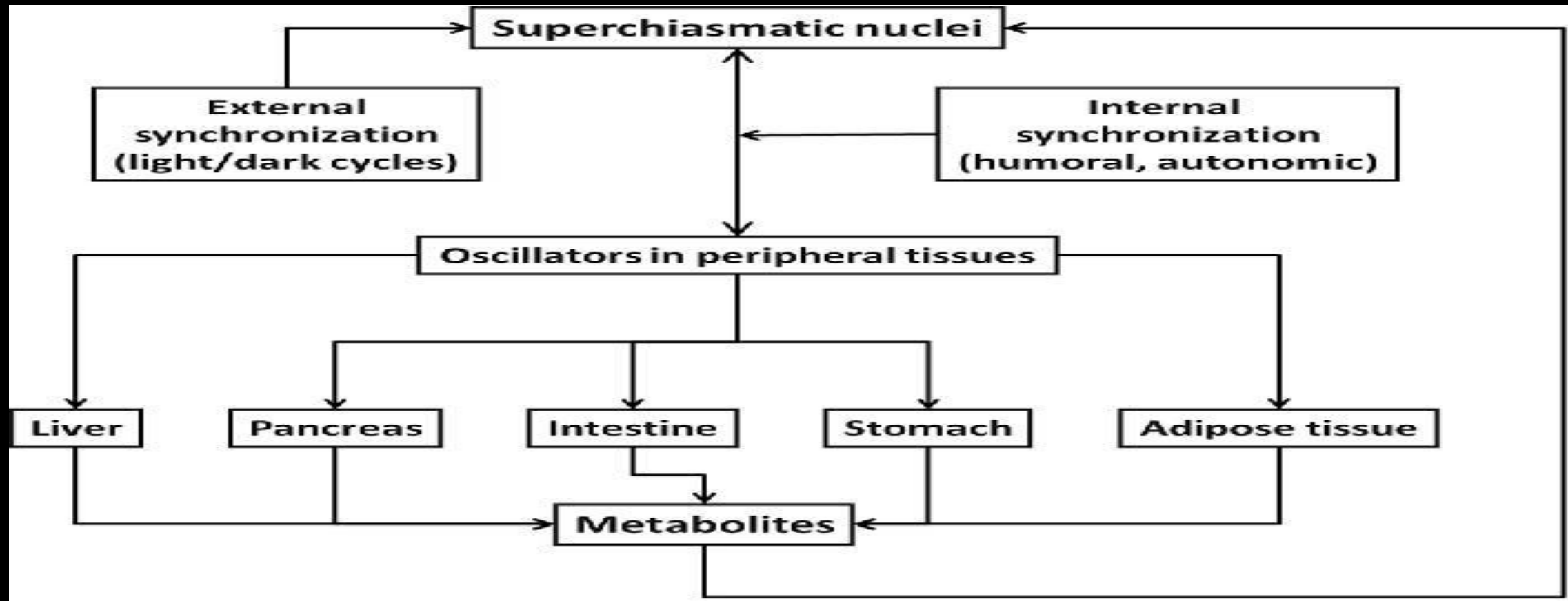
SOCIO-ECONOMIC

- ❖ Food demand
- ❖ Farmer's response
- ❖ Costs
- ❖ Policy
- ❖ Trade
- ❖ **Un-equal distribution**

- Human interventions
- Adaptation strategies
- Mitigation strategies

Agricultural production and vulnerability

MANIFESTATION OF SEASONAL BIORHYTHM IN HUMANS



The image features a vibrant blue background filled with multi-colored confetti in shades of red, yellow, teal, and purple. The words "Thank you" are written in a white, elegant cursive font. The word "Thank" is on the top line, and "you" is on the bottom line. A thick white horizontal line underlines the word "Thank", extending across the width of the text.

Thank
you