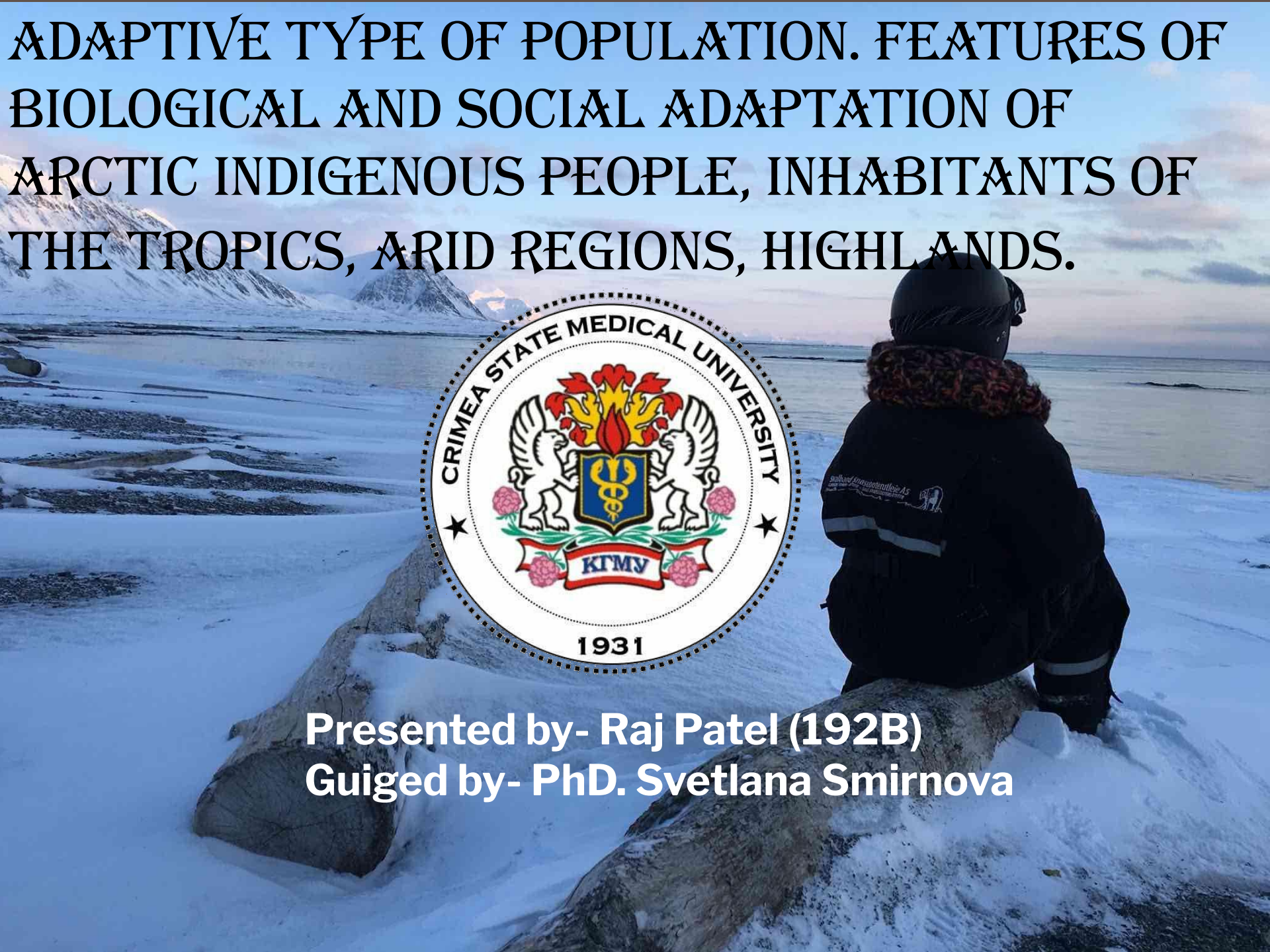
ADAPTIVE TYPE OF POPULATION. FEATURES OF BIOLOGICAL AND SOCIAL ADAPTATION OF ARCTIC INDIGENOUS PEOPLE, INHABITANTS OF THE TROPICS, ARID REGIONS, HIGHLANDS.



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ADAPTATION

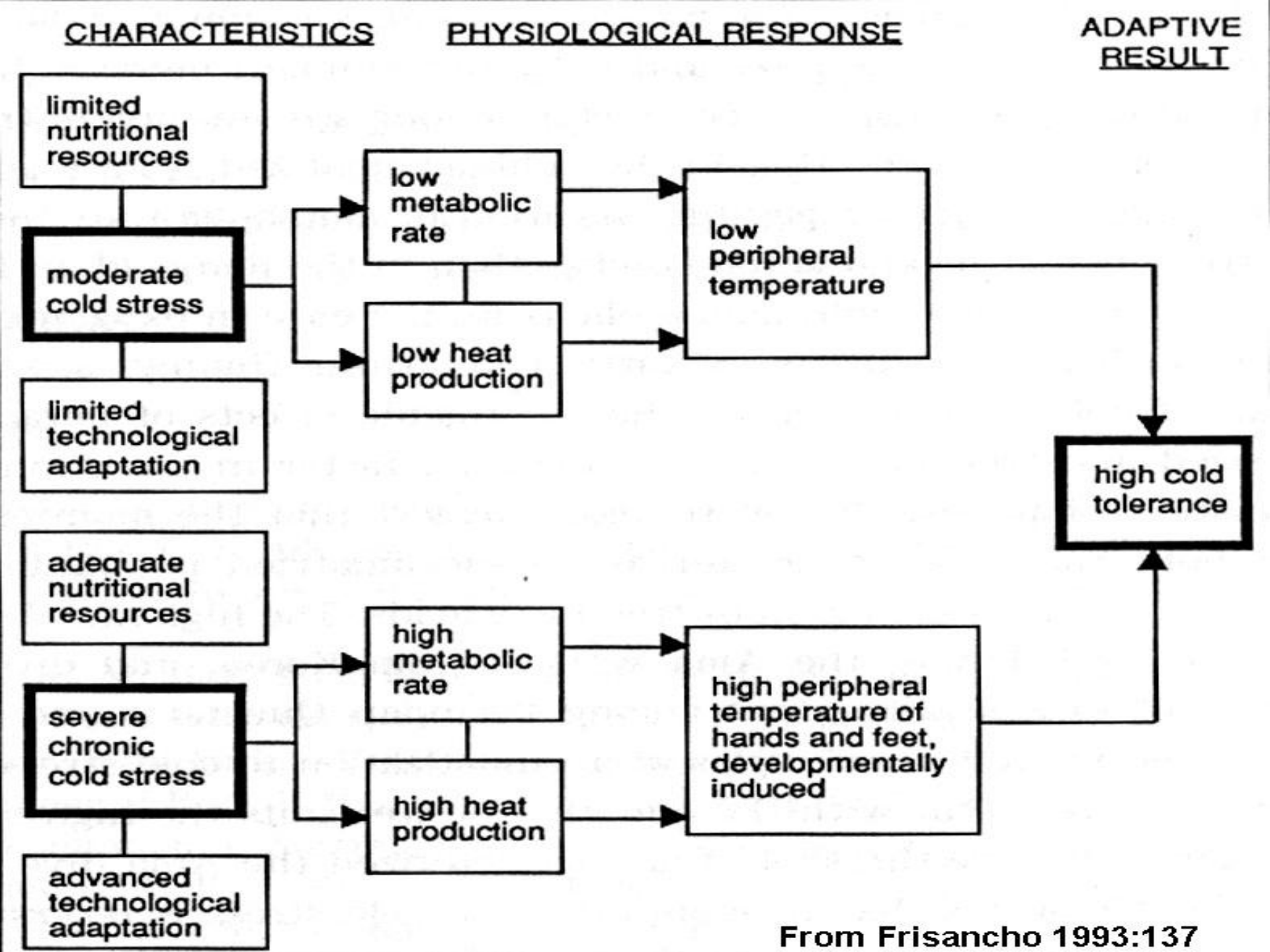
- In biology, **adaptation** has three related meanings. Firstly, it is the dynamic evolutionary process that fits organisms to their environment, enhancing their evolutionary fitness. Secondly, it is a state reached by the population during that process. Thirdly, it is a phenotypic trait or **adaptive trait**, with a functional role in each individual organism, that is maintained and has evolved through natural selection.

HUMAN ADAPTATION

- **Humans** have biological plasticity, or an ability to **adapt** biologically to our environment. An **adaptation** is any variation that can increase one's biological fitness in a specific environment; more simply it is the successful interaction of a population with its environment.

HEAT COLD ADAPTATION OF HUMAN

- Physical **adaptations** in **human** beings are seen in response to extreme **cold**, humid **heat**, desert conditions, and high altitudes. **Cold adaptation** is of three types: **adaptation** to extreme **cold**, moderate **cold**, and night **cold**. Ordinarily the body rids itself of excess **heat** by sweating.

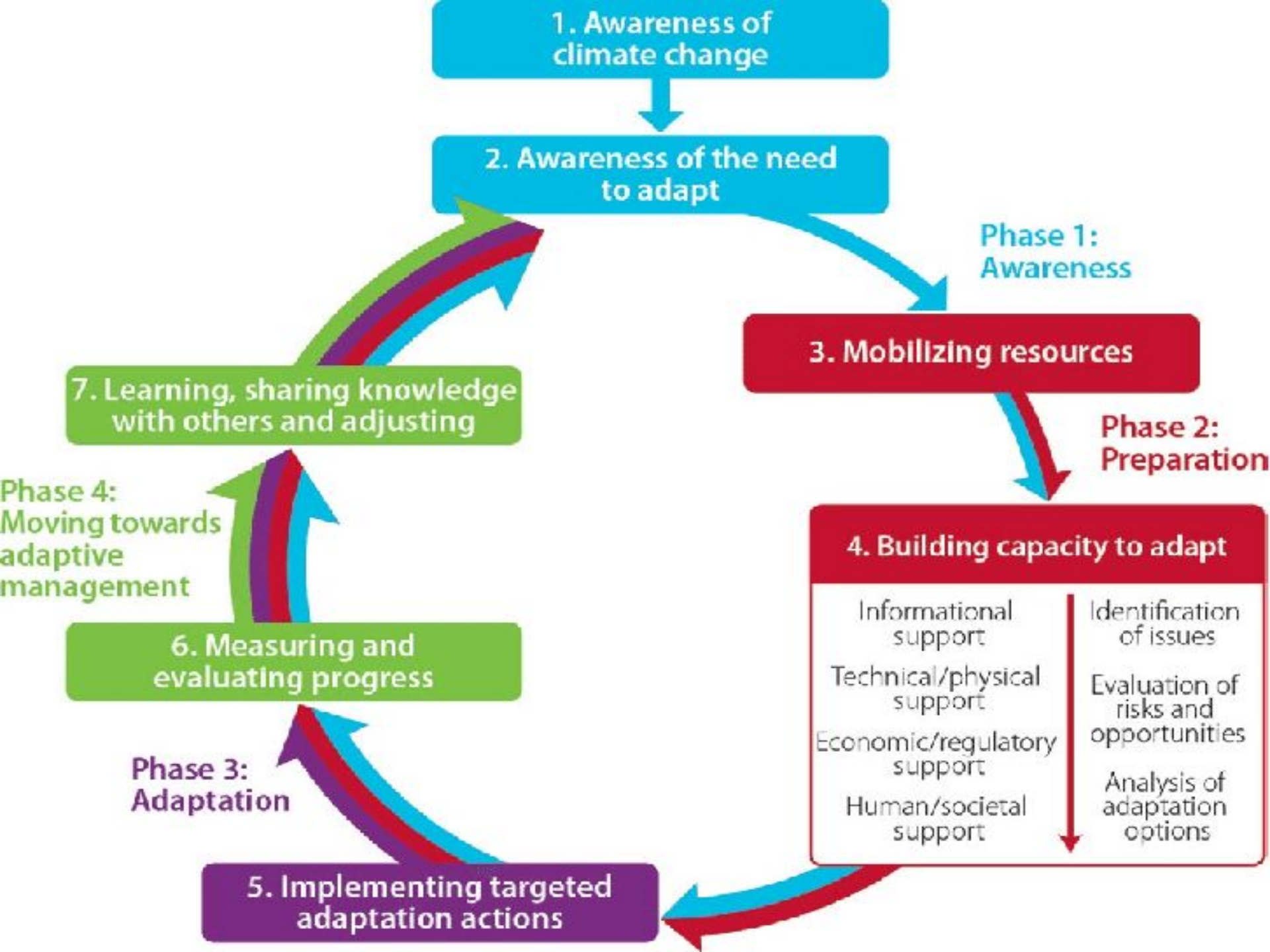


From Frisancho 1993:137

ADAPTIVE TYPE OF POPULATION

- **Adaptive type** – in evolutionary biology – is any population or taxon which have the potential for a particular or total occupation of given free of underutilized home habitats or position in the general economy of nature. In evolutionary sense, the emergence of new adaptive type is usually a result of adaptive radiation certain groups of organisms in which they arise categories that can effectively exploit temporary, or new conditions of the environment.

- Such evolutive units with its distinctive – morphological and anatomical, physiological and other characteristics, i.e. genetic and adjustments (feature) have a predispositiona for an occupation certain home habitats or position in the general nature economy.
- Simply, the adaptive type is one group organisms whose general biological properties represent a key to open the entrance to the observed adaptive zone in the observed natural ecological complex.
- Adaptive types are spatially and temporally specific. Since the frames of general biological properties these types of substantially genetic are defined between, in effect the emergence of new adaptive types of the corresponding change in population genetic structure and eternal contradiction between the need for optimal adapted well the conditions of


1. Awareness of climate change
2. Awareness of the need to adapt
Phase 1: Awareness
3. Mobilizing resources
Phase 2: Preparation
4. Building capacity to adapt
Informational support
Technical/physical support
Economic/regulatory support
Human/societal support
Identification of issues
Evaluation of risks and opportunities
Analysis of adaptation options
5. Implementing targeted adaptation actions
Phase 3: Adaptation
6. Measuring and evaluating progress
Phase 4: Moving towards adaptive management
7. Learning, sharing knowledge with others and adjusting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ADAPTATION IN ARCTIC INDIGENOUS PEOPLE

- Northern people found many different ways to **adapt** to the harsh **Arctic** climate, developing warm dwellings and clothing to protect them from frigid weather. They also learned how to predict the weather and navigate in boats and on sea ice.
- The indigenous peoples of the North American Arctic include the **Eskimo** (**Inuit** and **Yupik**/**Yupiit**) and **Aleut**; their traditional languages are in the **Eskimo**-**Aleut** family. Many Alaskan groups prefer to be called Native Alaskans rather than Native Americans; Canada's Arctic peoples generally prefer the referent **Inuit**.

- What do you need to survive in the Arctic?
- Stay hydrated.
- Consume lots of calories and food high in fat.
- Protect yourself from the wind.
- Insulate yourself from the cold.
- Protect extremities.
- Stay dry.
- Don't get lost.
- Avoid weak ice.

Ringed seal and bearded seal are the most important aspect of an Inuit diet and is often the largest part of an Inuit hunter's diet. Land mammals such as caribou, **polar** bear, and muskox. Birds and their eggs. Saltwater and freshwater fish including sculpin, **Arctic** cod, **Arctic** char, capelin and lake trout.

ADAPTATION OF INHABITANTS OF TROPIC

- Tropical people drink less water because their food contains a lot of water. They know how to use thousands of edible, medicinal, and poisonous plants and how to grow crops in the forest's poor soil. They also know how to hunt and fish without driving the animals to extinction.
- The blood concentrations of water and salt adjust to allow greater cooling, the blood vessels alter to get more to the skin, and so on. Athletes use this process and train in harsher climates to cause more profound body adaptations.

ADAPTATION IN ARID REGIONS

- A **region** is **arid** when it is characterized by a severe lack of available water, to the extent of hindering or preventing the growth and development of plant and animal life. Environments subject to **arid** climates tend to lack vegetation and are called xeric or desertic.
- **People** have been **living in the desert** for thousands of years and have adapted to its extreme conditions. 2.5 million **people live** in the Sahara; this is including a couple of cities, such as Khartoum, which border the **desert**.

- Their traditional lifestyle has adapted to these extremely arid conditions.
- Their **nomadic lifestyle** means they do not settle in one area for long. Instead, they move on frequently to prevent exhausting an area of its resources.
- They have herds of animals which are adapted to living in desert conditions, such as camels.
- Their tents are built to allow air to circulate within them, keeping them cool. Animal hair is used to insulate them, to keep the tent cool during the day and warmer at night.
- **Modern adaptations to arid conditions**
- With both money and technology, desert areas can be developed to cater for modern lifestyles. Las Vegas, in the Mojave Desert, is one of the fastest-growing cities in the USA. The city of Las Vegas is lush and green in comparison with the surrounding desert.
- This is possible because 90 per cent of the water Las Vegas needs is imported from the Colorado River. The remaining 10 per cent comes from ground water. The demand for water is not sustainable and the city has started to plan to reduce the demand for water. One way is that new homes have restrictions on the amount and type of lawns that they can have. The authority also recycles water where it can.

ADAPTATION IN HIGHLANDS

- The impacts of climate change have been felt across the **Highlands**, from damage to infrastructure, to disruption of vital services, and a shift in growing seasons. Work in the **Highlands** to reduce greenhouse gas emissions will contribute to limiting the extent of future climate change but we cannot turn back the clock.
- **High-altitude adaptation in humans** is an instance of evolutionary modification in certain human populations, including those of Tibet in Asia, the Andes of the Americas, and Ethiopia in Africa, who have acquired the ability to survive at extremely high altitudes. This adaptation means irreversible, long-term physiological responses to high-altitude environments, associated with heritable behavioural and genetic changes. While the rest of the human population would suffer serious health consequences, the indigenous inhabitants of these regions thrive well in the highest parts of the world. These people have undergone extensive physiological and genetic changes, particularly in the regulatory systems of

- Around 140 million people, just under 2% of the world's human population, live permanently at altitudes above 2,500 metres (8,200 ft) in South America, East Africa, and South Asia. These populations have done so for millennia without apparent complications.[3] This special adaptation is now recognised as an example of natural selection in action.[4] The adaptation of the Tibetans is the fastest known example of human evolution, as it is estimated to have occurred in less than 3,000 years.
- Most of the **highlands** lead up to large alpine or sub-alpine mountainous regions such as the Australian Alps, Snowy Mountains, Great Dividing Range, Northern Tablelands and Blue Mountains. The most mountainous region of Tasmania is the Central **Highlands** area, which covers most of the

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