

- **Flexibility to accommodate newer information:** The protocol could be amended to include stricter controls i.e. more Ozone Depleting Substances (ODS) were added to the control list and ensure total phase out, rather than partial phase-out.
- **Trade Provisions and restrictions:** These limited the supplies of CFCs and other Ozone Depleting Substances (ODS) to non-signatories which forced them to ratify the Protocol.
- **Clear List of Targeted Sectors:** Clear articulation of chemicals and sectors allowed governments to prioritise the main sectors early.
- **Institutional Support:** An expert and independent Technology and Economic Assessment Panel (and its predecessors) helped signatories reach solid and timely decisions on often-complex matters.
- **Compliance Procedure:** It prioritised helping wayward countries back into compliance. If necessary, resources from the **Multilateral Fund** are available for some short-term projects.

Thus, the flexible and agile approach to the Montreal Protocol helped it become successful, which is also evident from the Kigali Agreement, which amended the Montreal Protocol to also include phasing out Hydrofluorocarbons (HFCs) as one of aims of the Protocol.

2. *What are Urban Heat Islands? Identifying the reasons behind their creation, discuss the measures which can help counter them.*

Approach:

- Introduce the phenomenon of Urban Heat Islands (UHI).
- Write about the reasons behind their formation.
- Mention the measures to tackle UHI.
- Conclude accordingly.

Answer:

Urban Heat Islands (UHI) are urbanized areas that experience higher temperatures than outlying areas. Structures such as buildings, roads, and other infrastructure **absorb and re-emit the sun's heat more than natural landscapes such as forests and water bodies**. Urban areas, where these structures are highly concentrated and greenery is limited, become “islands” of higher temperatures relative to outlying areas. It increases the demand for energy, leads to increased greenhouse gases emissions, discomforts human health and even affects the health of flora and fauna.

The major factors responsible for UHI

- **Anthropogenic heat discharges:** Sources of anthropogenic heat include cooling and heating buildings, manufacturing, transportation, and lighting. Heat from these sources warm the urban atmosphere by conduction, convection, and radiation.
- **Absorption of heat:** Paved over surfaces, such as roads and parking lots, absorb solar radiation as heat. Since these surfaces are impermeable, even water runoff is redirected to the stormwater system rather than being absorbed by plants or water bodies that help cool the area through evapotranspiration and evaporation.
- **Urban geometry:** The height and spacing of buildings affects the amount of radiation received and emitted by urban infrastructure. The tall buildings within many urban areas provide multiple surfaces for the reflection and absorption of sunlight, increasing the intensity with which urban areas are heated. High rise buildings also trap outgoing radiation.

