Effects of Soil Pollution from Agriculture

Agriculture is a **major contributor to soil pollution**, primarily through the overuse of **irrigation, fertilizers, pesticides, and poor land management practices**.
While agriculture sustains human life, unsustainable practices degrade soil quality, reduce fertility, and contaminate nearby ecosystems.

2. Causes of Agricultural Soil Pollution

- **Excessive Irrigation** – leads to **waterlogging and salinization** of soil.
- **Runoff from Farmlands** – carries sediments, fertilizers, pesticides, and animal waste.
- **Monocropping and Over-cultivation** – cause nutrient depletion and soil exhaustion.
- **Improper Waste Disposal** – dumping of agricultural residues and plastics on soil.

3. Effects on Soil Quality

- **Loss of Natural Fertility** due to continuous extraction of nutrients.
- **Soil Acidification/Alkalinization** from chemical residues.
- **Reduced Organic Matter** as natural humus is depleted.
- **Alteration of Soil Structure** making soil less porous and aerated.

4. Effects on Ecosystems and Groundwater

- **Contamination of Groundwater** from leaching of nitrates and pesticides.
- **Eutrophication** of nearby rivers and lakes due to fertilizer runoff.
- **Soil Biodiversity Loss** as earthworms, nitrogen-fixing bacteria, and other beneficial organisms decline.
- **Ecosystem Imbalance** as toxic chemicals affect plants and aquatic life.

5. Effects on Human Health

- Consumption of **contaminated crops** may cause long-term health risks.
- Nitrate-rich water leads to **methemoglobinemia (blue baby syndrome)**.
- Bioaccumulation of toxic residues through food chains causes **cancers, neurological issues, and organ damage**.