

Geography notes  
 Sec 3 Express/ Sec 4 Express [Revision]  
 Impacts of Green Revolution

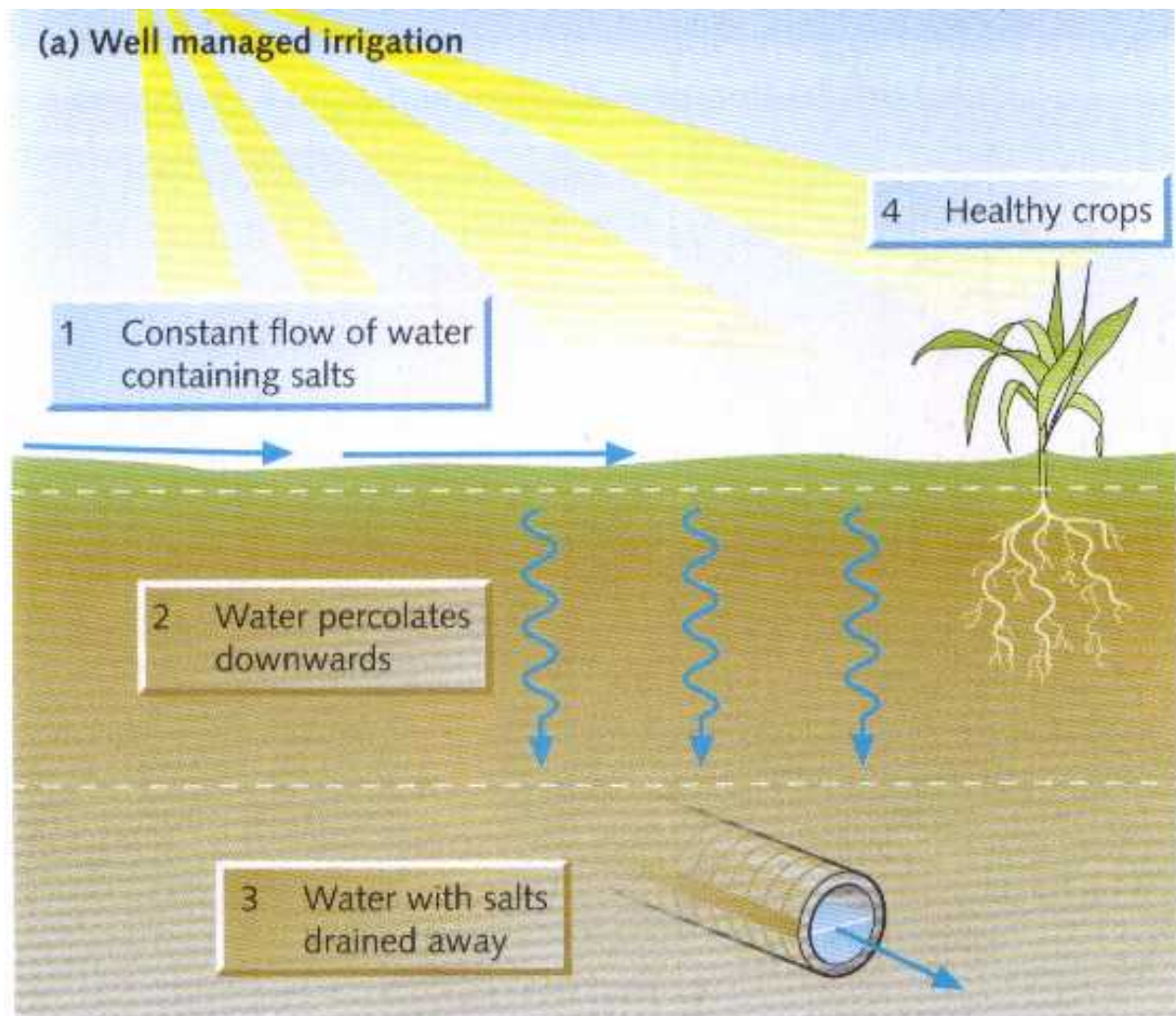
Good Impacts	Supporting Details
1. Increased in food production	<ul style="list-style-type: none"> <li>✓ The introduction of HYV seeds causes the world production of rice to be doubled.</li> <li>✓ E.g. China's Rice yields from 2.4 tonnes per hectare are increased to 5.7 tonnes per hectare.</li> </ul>
2. Integration of subsistence farmers to commercial farmers	<ul style="list-style-type: none"> <li>✓ Green Revolution doubles the food production and causes surplus for sale.</li> <li>✓ The subsistence farmers are able to escape from vicious cycle of poverty and integrate into commercial farmers.</li> </ul>
3. Self sufficient	<ul style="list-style-type: none"> <li>✓ With more savings and income due to increase in food production, they can now buy machines, irrigation, fertilizers, pesticides, herbicides.</li> <li>✓ This shortens growing season.</li> <li>✓ Many farmers are able to grow 2 or more crops of rice each year.</li> <li>✓ This allows them to be self sufficient and the surplus for them to sell in the market.</li> </ul>
4. No reliant of physical factors	<ul style="list-style-type: none"> <li>✓ Incomes of the farmers have increased due to Green Revolution.</li> <li>✓ They can make use of the money to buy machines, fertilizers &amp; build irrigation canals.</li> <li>✓ With irrigation canals &amp; fertilizers, they do not have to rely on the rain and soil fertility.</li> </ul>
5. Improved standard of living	<ul style="list-style-type: none"> <li>✓ With more income &amp; savings, the farmers are able to enjoy higher standard of living. How?</li> <li>✓ The farmers have a chance to own their farms instead of being indebted to landlords as tenant farmers.</li> </ul>
6. Opening up of other industries	<ul style="list-style-type: none"> <li>✓ As farmers become wealthier, they will like to buy fertilizers which can increase their food production.</li> <li>✓ The industries which manufacture and pack the fertilizers will receive more orders from the farmers.</li> <li>✓ This industry will expand due to the profit.</li> <li>✓ Hence, it will employ more labour and create jobs for every one.</li> </ul>
7. Reformation of the land to good use	<ul style="list-style-type: none"> <li>✓ In the past, farmers cultivate in small and fragmented farms.</li> <li>✓ This is uneconomical to farm as this produces low yield.</li> <li>✓ Green Revolution forced these farmers to consolidate such farms whereby farmer plant in a single plot.</li> <li>✓ This is carried out mainly in India.</li> </ul>

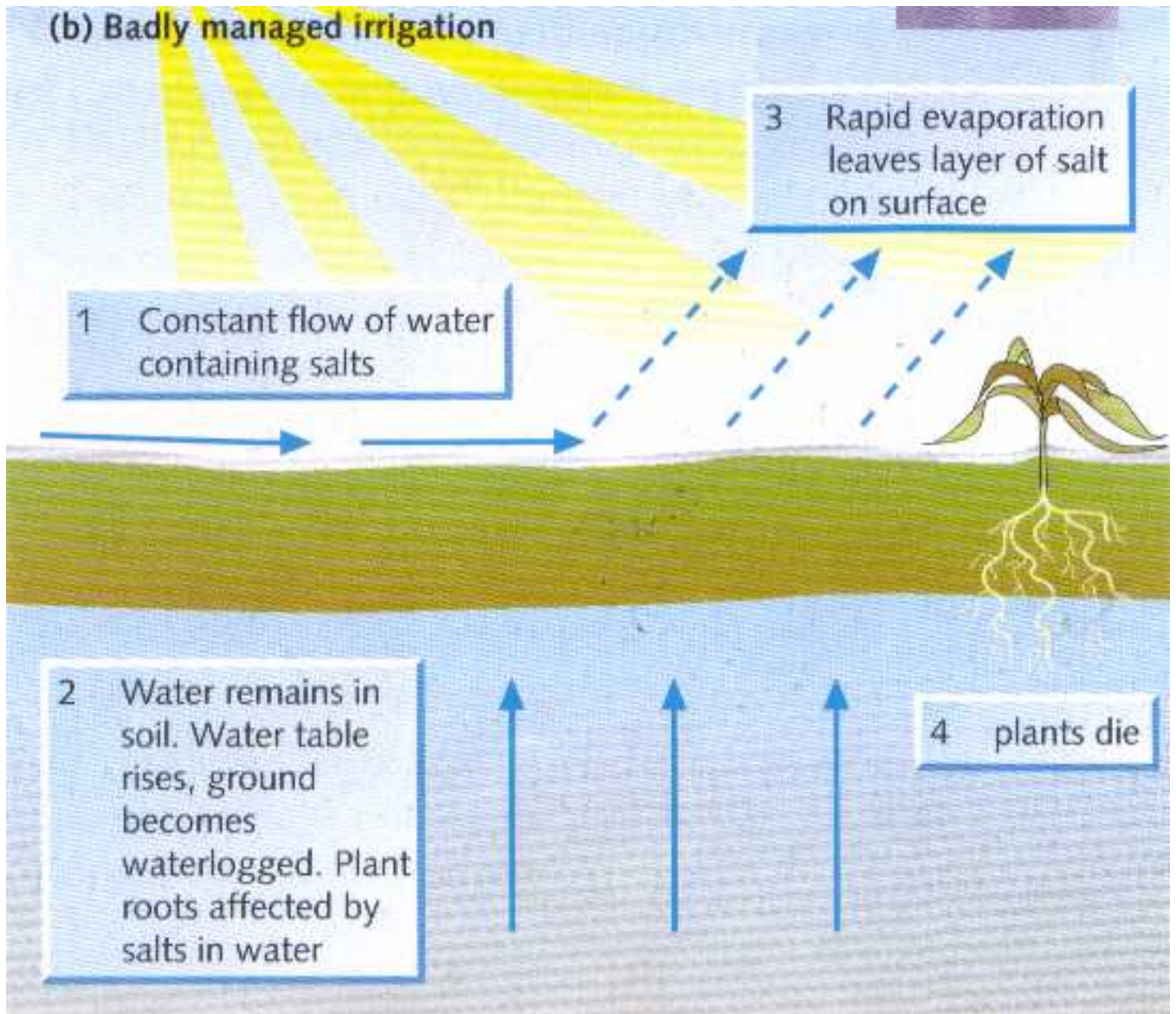
Bad Impacts	Supporting Details
1. Increase cost of production	<ul style="list-style-type: none"> <li>✓ HYV seeds and the use of fertilizers, pesticides, machinery as well as modern irrigation system are costly.</li> <li>✓ Most farmers have limited capital to invest in such an</li> </ul>

	expensive method.
2. Increased gap between the rich and the poor.	<p>Rich farmers:</p> <ul style="list-style-type: none"> <li>✓ The rich farmers benefit from Green Revolution as they can afford the high cost of growing HYV seeds and use modern methods for cultivation.</li> <li>✓ They can produce more, and sell more, and when supply increases, price decreases.</li> </ul> <p>Poor farmers:</p> <ul style="list-style-type: none"> <li>✓ However, the poor farmers can only afford to rely on traditional method of growing rice suffer further.</li> <li>✓ Some poor farmers may resort to borrow money from money lender to practise Green Revolution.</li> <li>✓ Conversely, some poor farmers have no prior knowledge of Green Revolution and/or they have only a small market.</li> <li>✓ Thus, they cannot compete with the rich farmers as they have to raise their profit to pay back to the money lenders.</li> <li>✓ Worst of all, they get indebted by the money lenders.</li> <li>✓ This is because the consumers do not want to buy their food as it is too expensive.</li> <li>✓ They will have to end up mortgage or sell their cultivating land.</li> </ul> <p>✓ Thus, the rich gets richer and the poor get poorer.</p>
3. Creates Unemployment	<ul style="list-style-type: none"> <li>✓ With increased yields, mechanization often increases.</li> <li>✓ This affects unemployment of local farm labour.</li> <li>✓ Unemployment in the rural areas may increase, leading to other problems like rural-urban migration.</li> </ul>
4. Environmental harms	<p><u>Environmental harm 1:</u></p> <ul style="list-style-type: none"> <li>✓ Many of the rural areas that practise Green Revolution depend on groundwater or rivers for their water supplies.</li> <li>✓ Water collected is used for irrigation.</li> <li>✓ The use of irrigation without proper drainage resulted in increased salinity. (RE: Appendix 1)</li> <li>✓ Salty water may kill the fishes and inadvertently affect humans.</li> </ul> <p><u>Environmental harm 2:</u></p> <ul style="list-style-type: none"> <li>✓ The extensive use of chemicals (e.g. fertilizers) pollutes the environment.</li> <li>✓ Water supplies are polluted when the chemicals seeped into groundwater and nearby streams.</li> <li>✓ Eutrophication may occur in nearby streams or rivers.</li> </ul>
5. Limited applications to technology	<ul style="list-style-type: none"> <li>✓ Green revolution is effective in lowland areas where irrigation can be used.</li> <li>✓ This means that farmers in hilly area could not benefit from Green Revolution.</li> </ul>
6. Loss of Resistance to disease	<ul style="list-style-type: none"> <li>✓ The popularity of HYV seeds resulted in many farmers planting the same variety of seed.</li> </ul>

	<ul style="list-style-type: none"> <li>✓ An outbreak of new pests or disease can destroy all the crops off farmers using the same variety as it has the same resistant.</li> <li>✓ The extent of damage is wider and farmers incur heavy losses.</li> </ul>
7. Not suited to all diets	<ul style="list-style-type: none"> <li>✓ HYV seeds developed were based on food crops commonly consumed in US.</li> <li>✓ These cereals were not catering to other countries.</li> <li>✓ E.g. Pulses and cereals in Africa</li> </ul>
8. Lots of weeds	<ul style="list-style-type: none"> <li>✓ Increased use of fertilizers leads to abundant growth of weeds.</li> <li>✓ More farm help is required for tedious task for weeding.</li> </ul>
9. Price fluctuations	<ul style="list-style-type: none"> <li>✓ Green Revolution results in surplus production of rice.</li> <li>✓ The price of crops falls when yields are high.</li> <li>✓ At such times, farmers have Hobson's choice but to sell their surplus production at a very much reduced prices.</li> </ul>

Appendix 1  
1. Salinisation





Extracted from: [The New Wider World, page 97, fig 6.37](#)