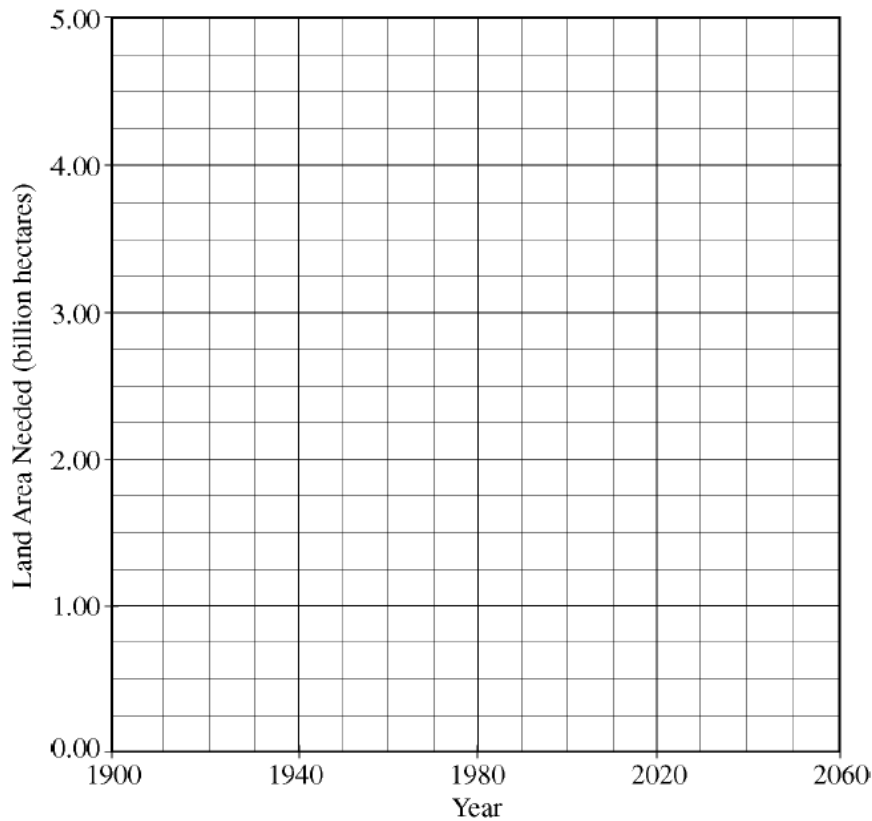


SOIL FREE RESPONSE

As the world's population increases and availability of new arable land decreases, providing sufficient food for the world's human population is becoming increasingly difficult. The table below shows the area of land needed to feed the world's population from 1900 projected to the year 2060.

Year	1900	1940	1980	2020	2060
Land Area Needed (billion hectares)	0.40	0.60	1.25	2.50	4.75

(a) On the graph below, plot the data from the table above and draw a smooth curve.



- (b) Assume that the maximum arable land area on Earth is 4.00 billion hectares. Using the smooth curve that you created above, determine the year in which the human population is likely to run out of arable land for agriculture.
- (c) Soil quality is a critical factor in agriculture. Identify TWO physical and/or chemical properties of soils and describe the role of each property in determining soil quality.
- (d) Describe TWO viable strategies for reducing the amount of land needed for agriculture.
- (e) One problem that can result from agriculture is soil salinization.
 - (i) Describe how salinization occurs.
 - (ii) Describe one method to prevent or remediate soil salinization.