

**BACCALAURÉAT GÉNÉRAL
ÉPREUVE SPÉCIFIQUE DES SECTIONS EUROPÉENNES
MATHÉMATIQUES – ANGLAIS**

SUJET 17

**Chocolate paradox
Statistics and reasoning**

Sujet comportant deux pages. L'usage de tout modèle de calculatrice, avec ou sans mode examen est autorisé.

Ivory Coast, the world's biggest cocoa producer, and major chocolate companies from Mars to Hershey [...] pledged last year to eliminate the production and sourcing of cocoa from protected forests.

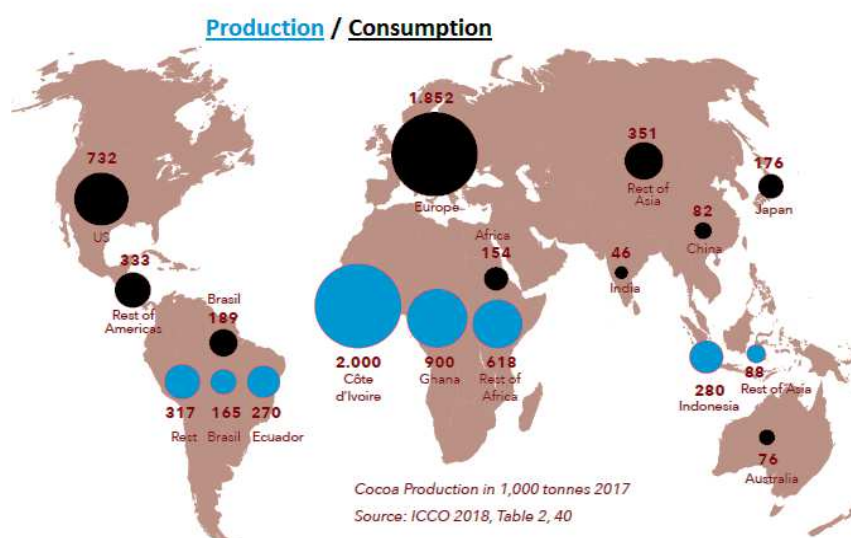
Year	1960	1970	1990	2000	2015
Primary forest area (million of ha)	16.5	12	7.8	4	3.4

[Eradicating] deforestation in the cocoa supply chain is just one of the commitments made by the world's chocolate makers to make the industry more sustainable, along with finding ways to end child labor and boost farmers' incomes.

Very little of the cocoa industry's \$100bn (£80bn) profit makes it into the pockets of cocoa farmers even now. They receive only 6% of a chocolate bar's sale price to the manufacturers' and retailers' 80%. But activists warn the new plans could further benefit corporations at the expense of farmers.

[It's useful to know that] with more chocolate being devoured each year – the average Briton ate 8.4 kgs (18.5 Lbs) of it in 2017 – the few remaining forests are being cut down to meet demand.

Adapted from Tim COCKS, Ange ABOA, Reuters.com "Plans to end cocoa deforestation"



Ruth MACLEAN, West Africa correspondent for *The Guardian*, Fri 7 Dec 2018

Le sujet doit être restitué à la fin de l'épreuve.

Dégager les idées essentielles du texte ci-contre.

1. Identify the main ideas of this text.
2. Explain the word “paradox” in the title.

Exercise

1. Using the data given in the text, in what year will the forest of The Ivory Coast have disappeared?
2. a. Compute the world's production and consumption of cocoa in 2017 (in tons).
b. Compute the rate of overproduction in 2017.
c. Let's assume that, according to some forecasts, the production increases by 1% per year while the consumption increases by 3%.
When will the production become insufficient? You can use a graph.
Then, what may happen?

3. If you have enough time...

A chocolate bar is made of 4 rows of 6 squares each.

How many times will you have to split the bar to get only individual squares?

What happens in the general case when the chocolate bar is made of p rows of q squares?

