

Expectations on Forest Academic Education

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The *United Nations* declare
the period 2005 – 2014 as the



„Decade for
Education of
Sustainable
Development“

Expectations on Forest Academic Education

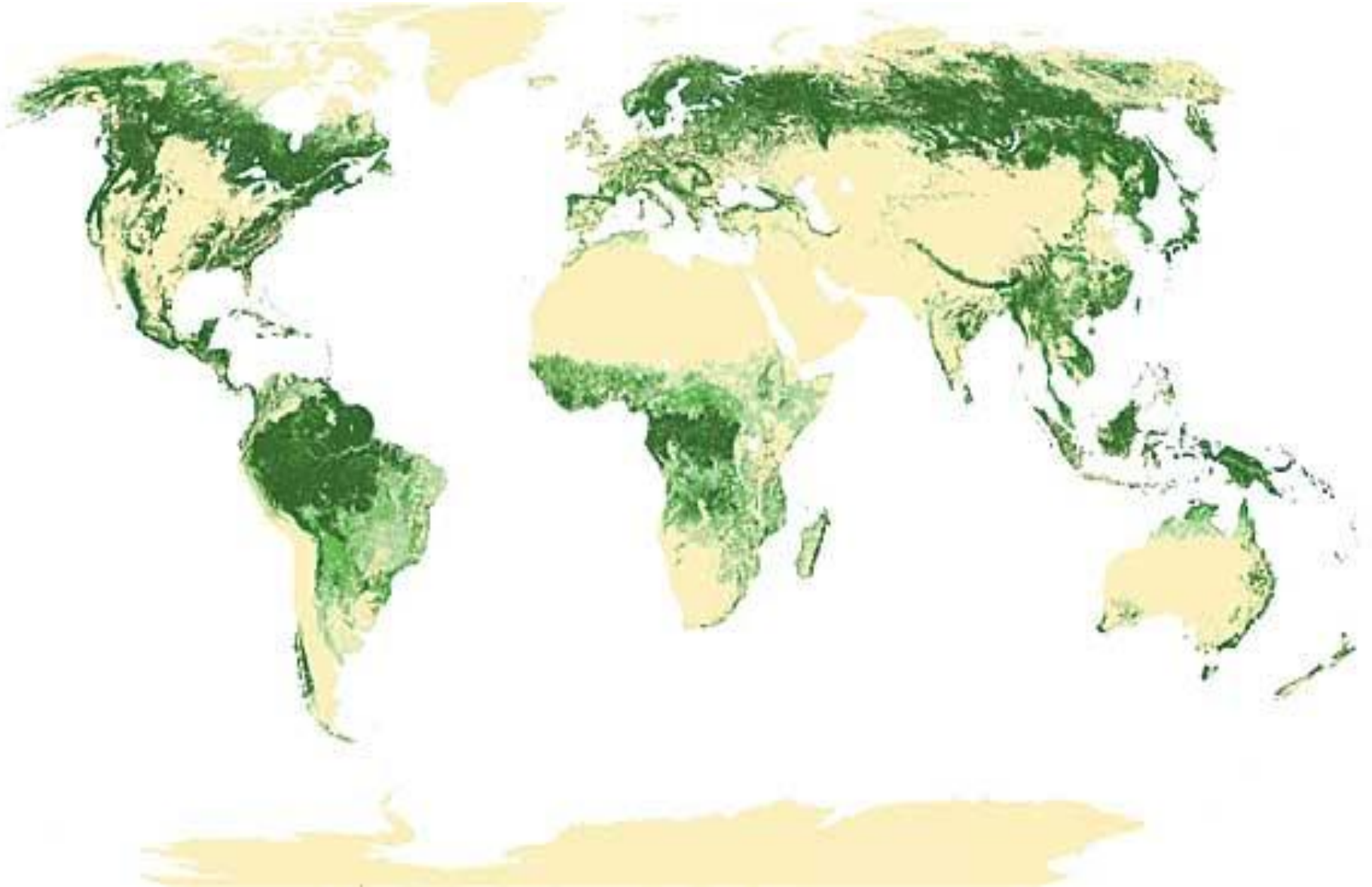
A view back

- a. Expectations of the society
- b. Expectations of the (education) policy
- b. Expectations of the (forest) employers
- c. Expectations of the students
- d. Expectations of the universities (teachers)

Outlook .



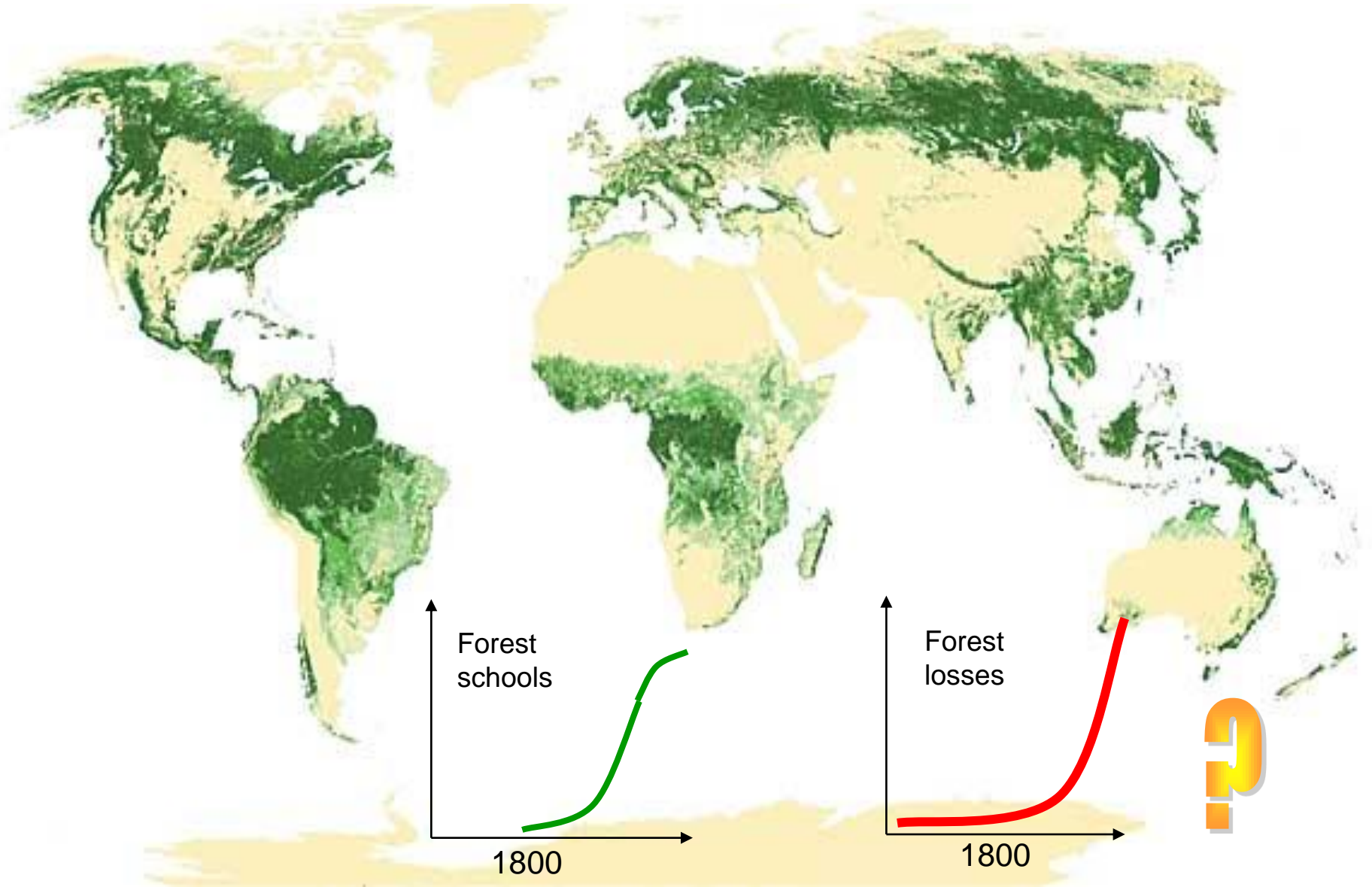
(Why) do we need foresters (forest engineers)?



The expectations of the society:

Not only users of forest products but also sustainable management of the forests

This needs qualified (well educated) and engaged forest managers!



The first forest schools

1785

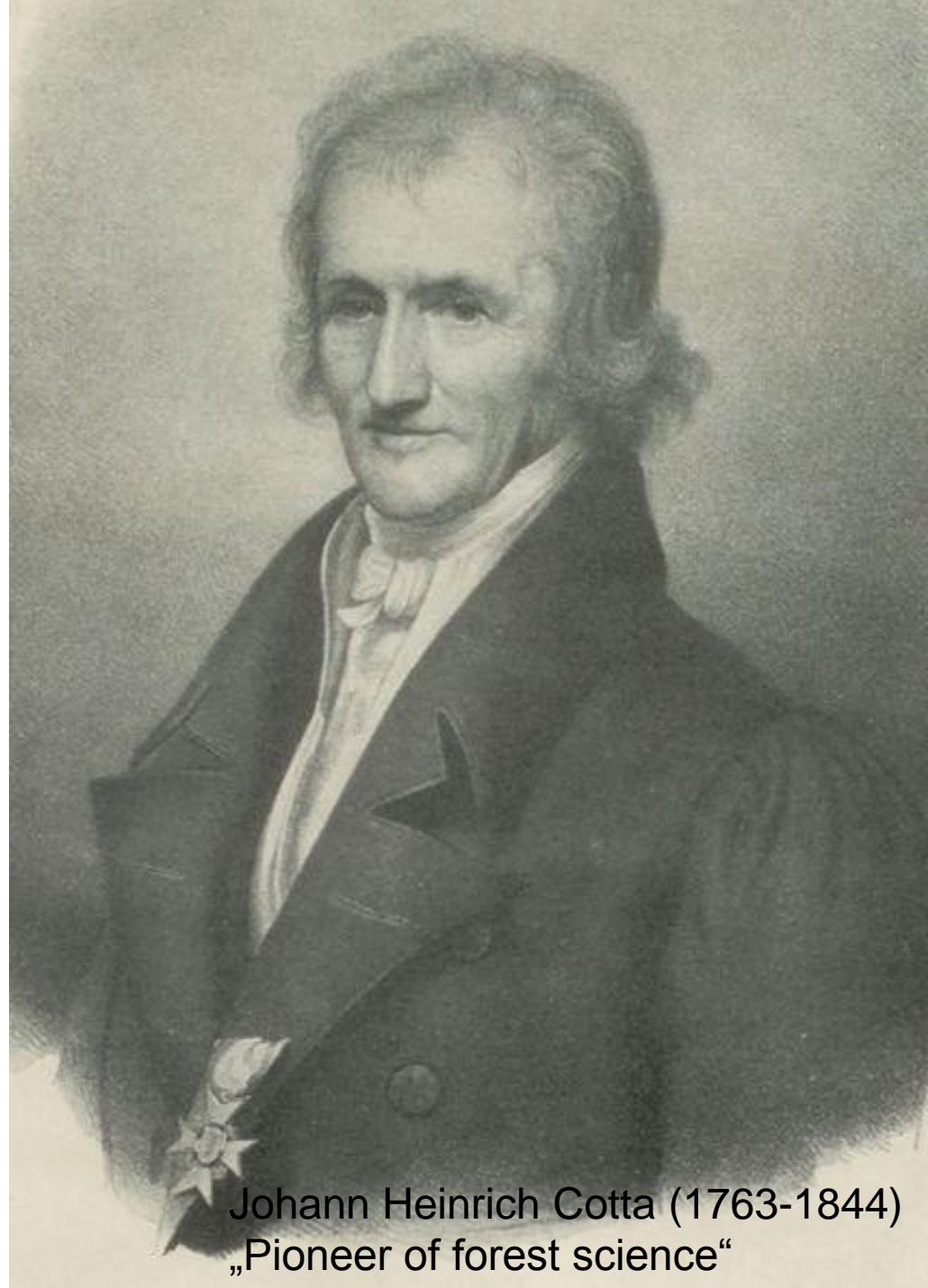
Master school of forestry established by [Heinrich von Cotta](#) in Kleine Zillbach, [Thuringia](#)

1787 or 1789

Master school of forestry established by [Georg Ludwig Hartig](#) at [Hungen](#), [Hesse](#),
(today *Eberswalde*)

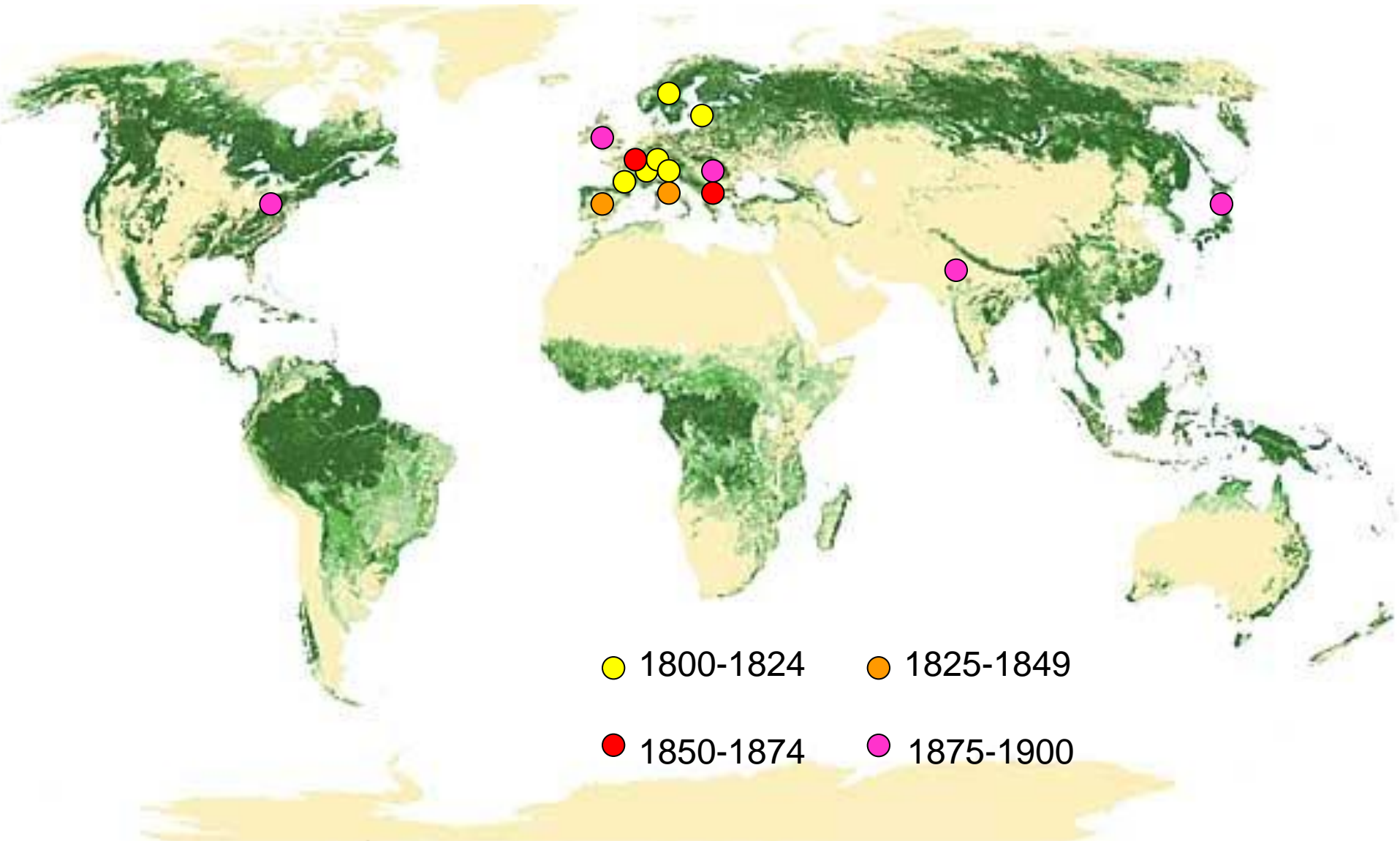
1790

School of forestry established in [Munich](#), [Bavaria](#)

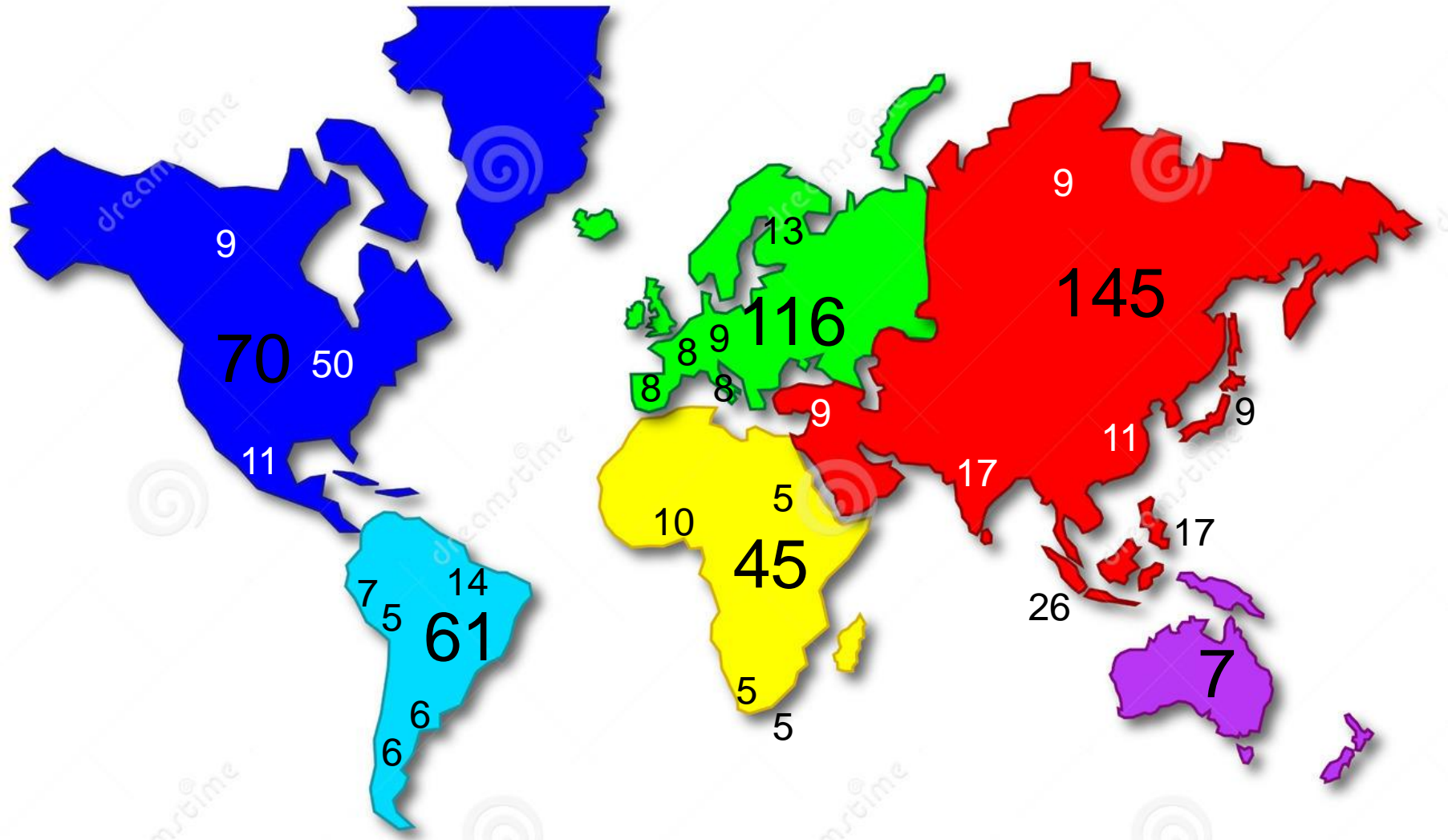


Johann Heinrich Cotta (1763-1844)
„Pioneer of forest science“

Founded forest schools in the 19th century



N of Forest Faculties and colleges (444)



Teaching goals in forest education in the beginnings

Forest management
(inventory, regeneration concepts)

Forest regeneration
(planting, seeds, breeding)

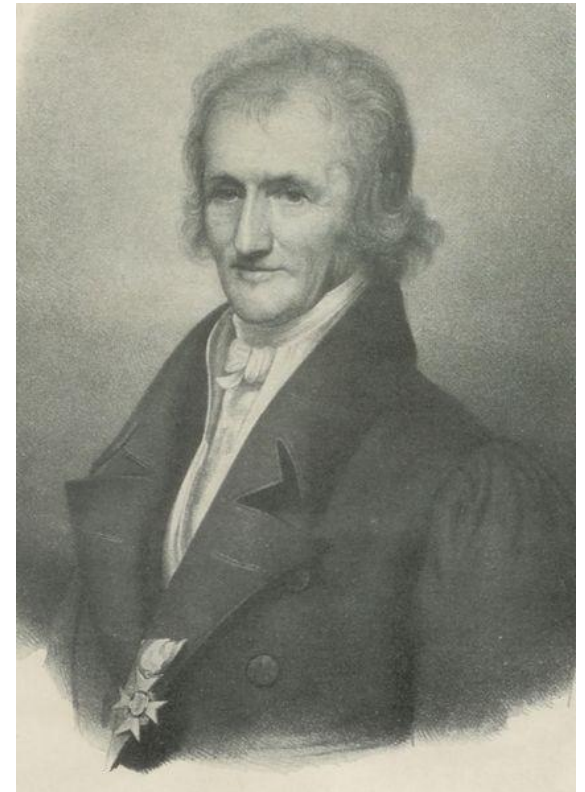
Forest growth (yield tables)

Tree species ecology
(incl. „new“ species)

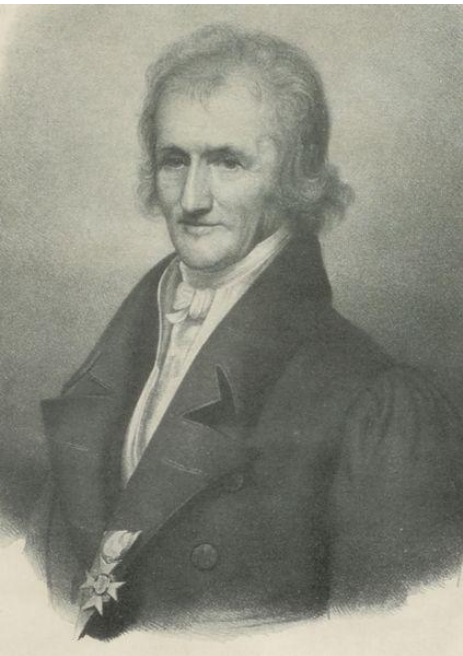
Forest economics

Forest technology

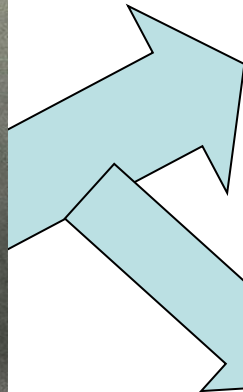
Hunting



"pioneer of scientific forestry"



Forest schools



Forest academy



Forest Faculty
(as part of a university)

more focused on
practical aspects

Traditional forest
disciplines are
important

also scientific view

natural sciences

Interdisciplinary contents

Soft skills

Research oriented



As a part of the public education system (university)

Forest academic education has to respect
the expectations (= laws and regulations)
of the (education) policy:



(EU)-Policy decided on University level: The Bologna Process

The Study Programs should be

- faster
- more structured
- better prepared for the job market
(teaching contents focussed on ELOs = expected learning outcomes)
- more attractive for students mobility
- Soft skills

Soft Skills

Presentation Technics

Ability to work in a team

Ability to lead and instruct a team

Scientific working

IT knowledge

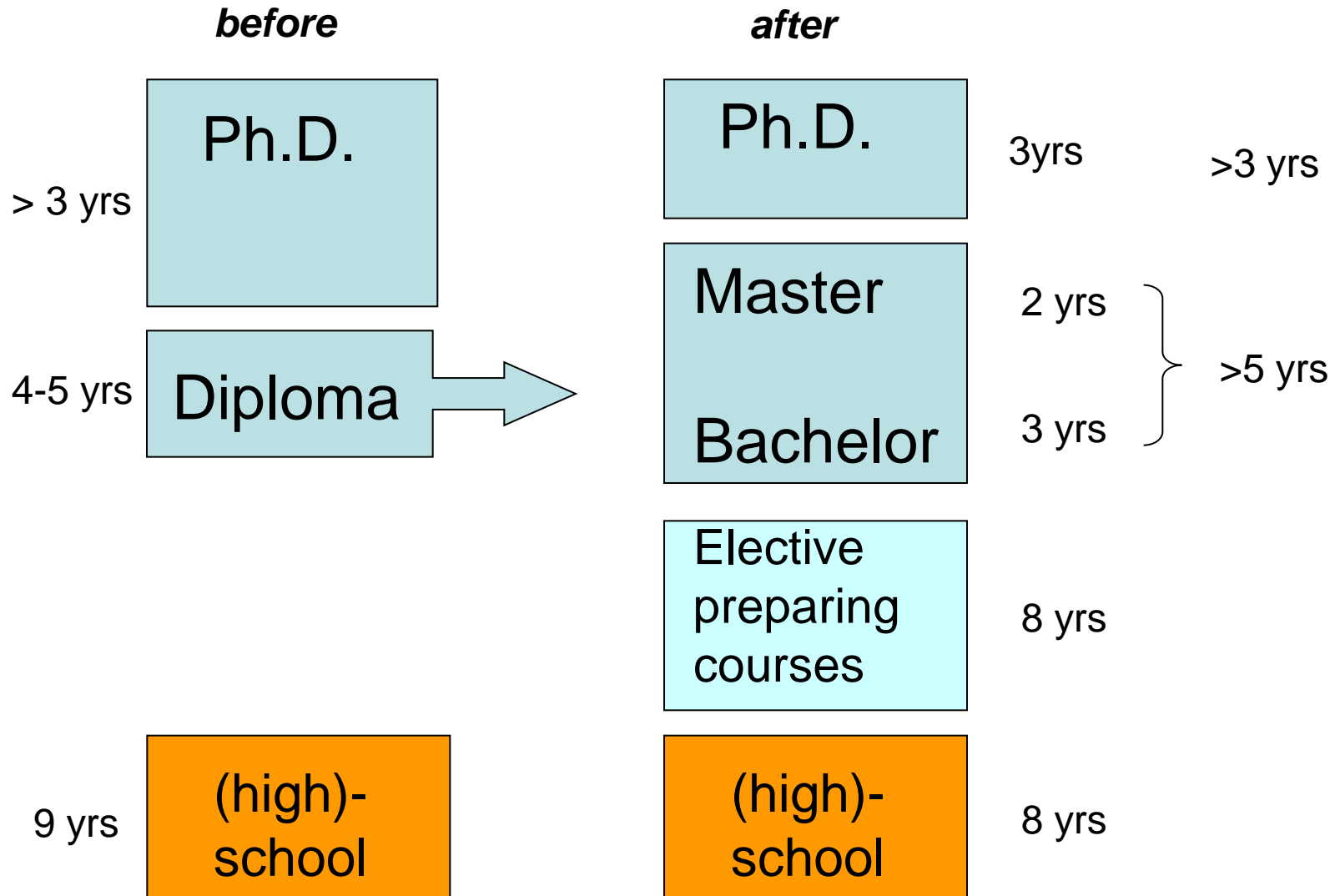
Foreign languages and
communication



The Bologna process

Education
policy

(negotiations of the European countries for academic education)



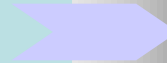
faster ???

Diploma

4-5 years

Bachelor

3 years



job

Future expectations:

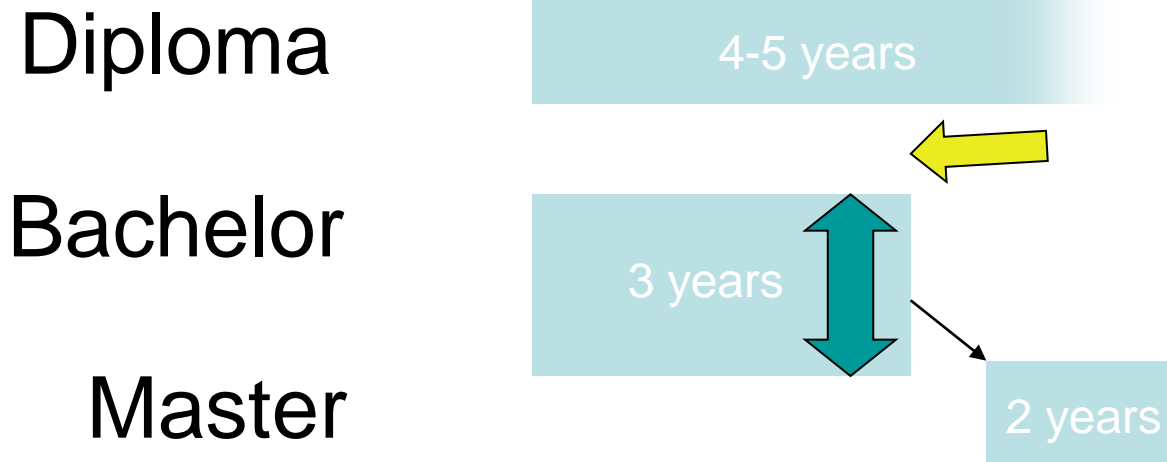
Just the bachelor degree	11%
Definitely plus master	35%
Not yet decided	54%

Depending on

study development	49%
job market developm.	13%
study financing	12%

Less (facts) to learn ???

NO !



professors did not reduce the learning contents significantly !

Problems of students

Students say that their work at the university is affected by

	Diploma	B.Sc.	
Too many examinations per semester	17%	40%	—
Clear examination requirements	33%	22%	—
	2001	2010	
High achievement requirements	39%	51%	—
Well structured study programs	24%	28%	+

Expectations of the policy making the academic education

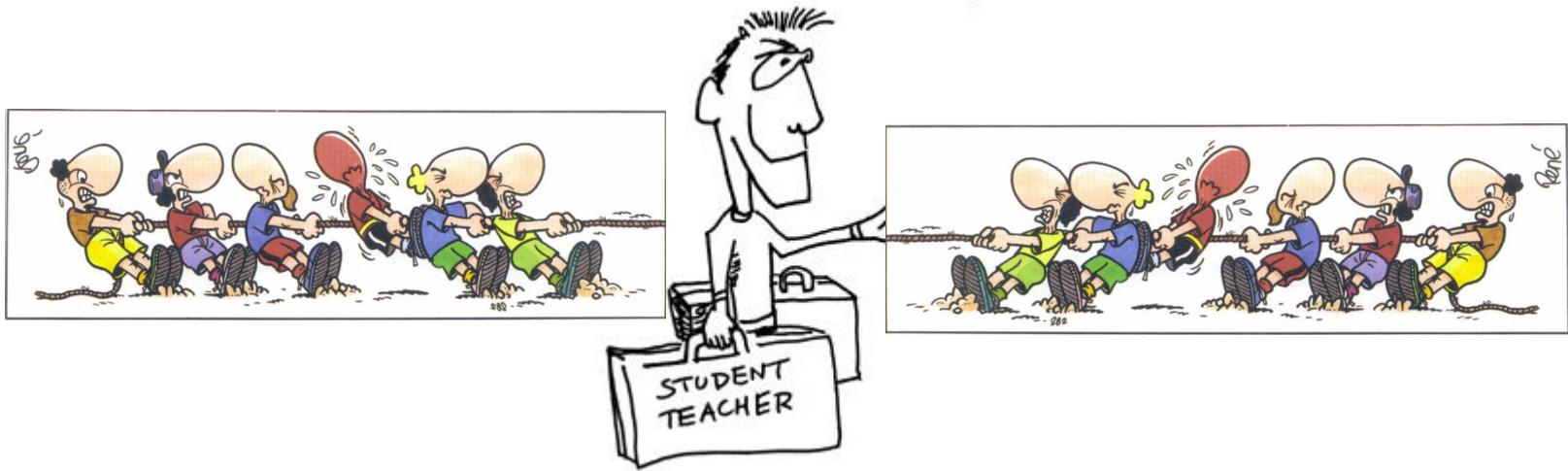
- *faster,*
- *more efficient*
- *more international (better students mobility)*
- *more adapted on the job market demands
(better employability)*

was only successful for a few sectors

Expectations of policy do not correspond with the
Expectations of students (teachers and employers)



The forest sector is a very special one...



Academic Education

University (Bologna)



Forest Administration

Education
policy

Employers

Employers expectation

Employers



Source: Loriot

Forest administration as a potential employer expects more practical competences in traditional forest disciplines

Expectations of the employers (here: public forest administrations)

- *practical experience*
- *detailed list of forest disciplines*
- *selected soft skills
(communication)*

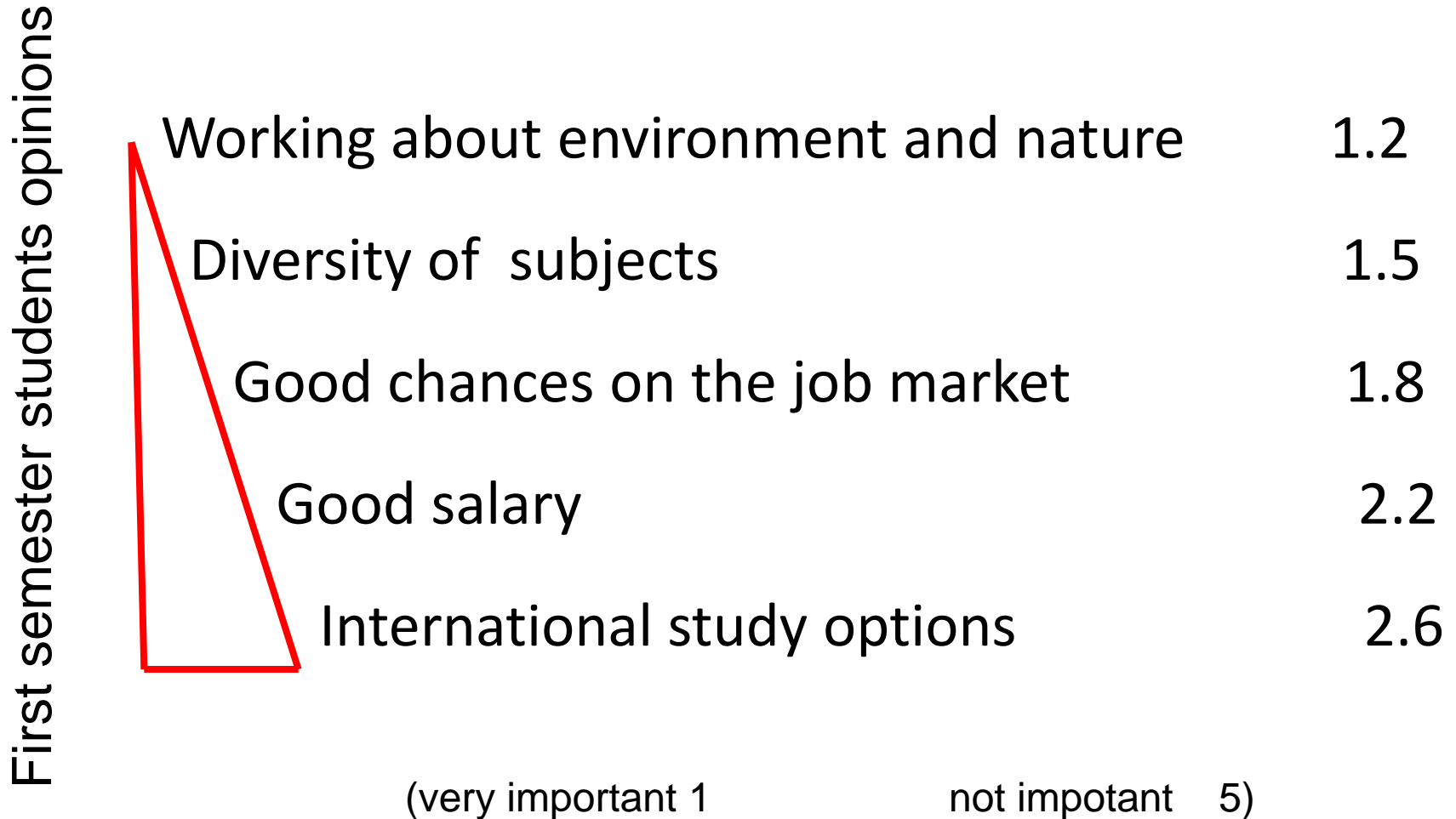


Expectations of the Employers do not correspond perfectly with the Expectations of Education policy (Bologna)

Students Expectations

Students
view

What is important for the decision for a forest study



What is your job perspective ?

Nature conservation and environment protection	49%
Forest administration	44%
International job (not in Germany)	33%
Companies (energy, timber, industry)	27%
Science	14%
No idea yet	7%

...and the good circuit...

a critical remark or
teachers expectations

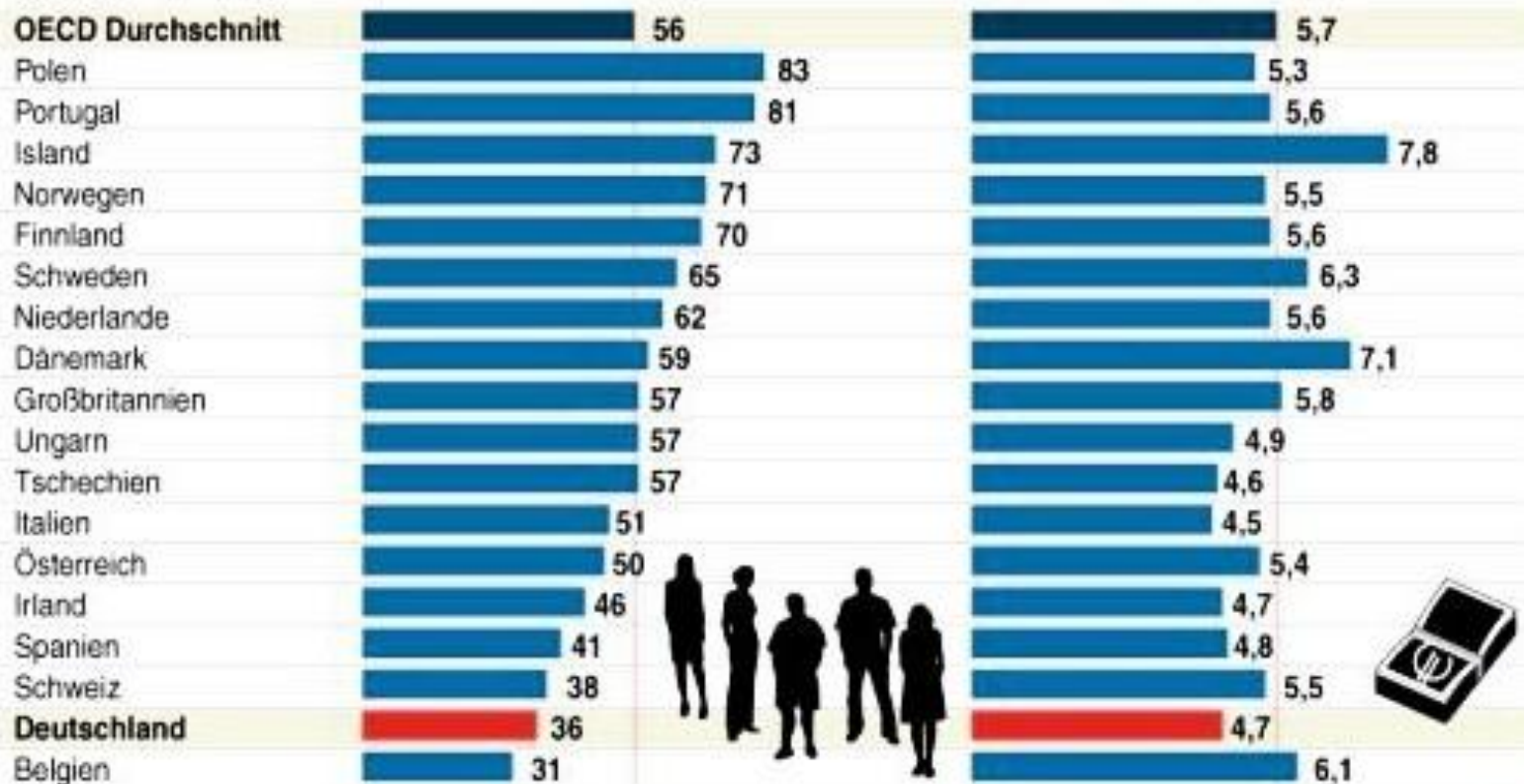


Education policy is striving for
more and more well educated people

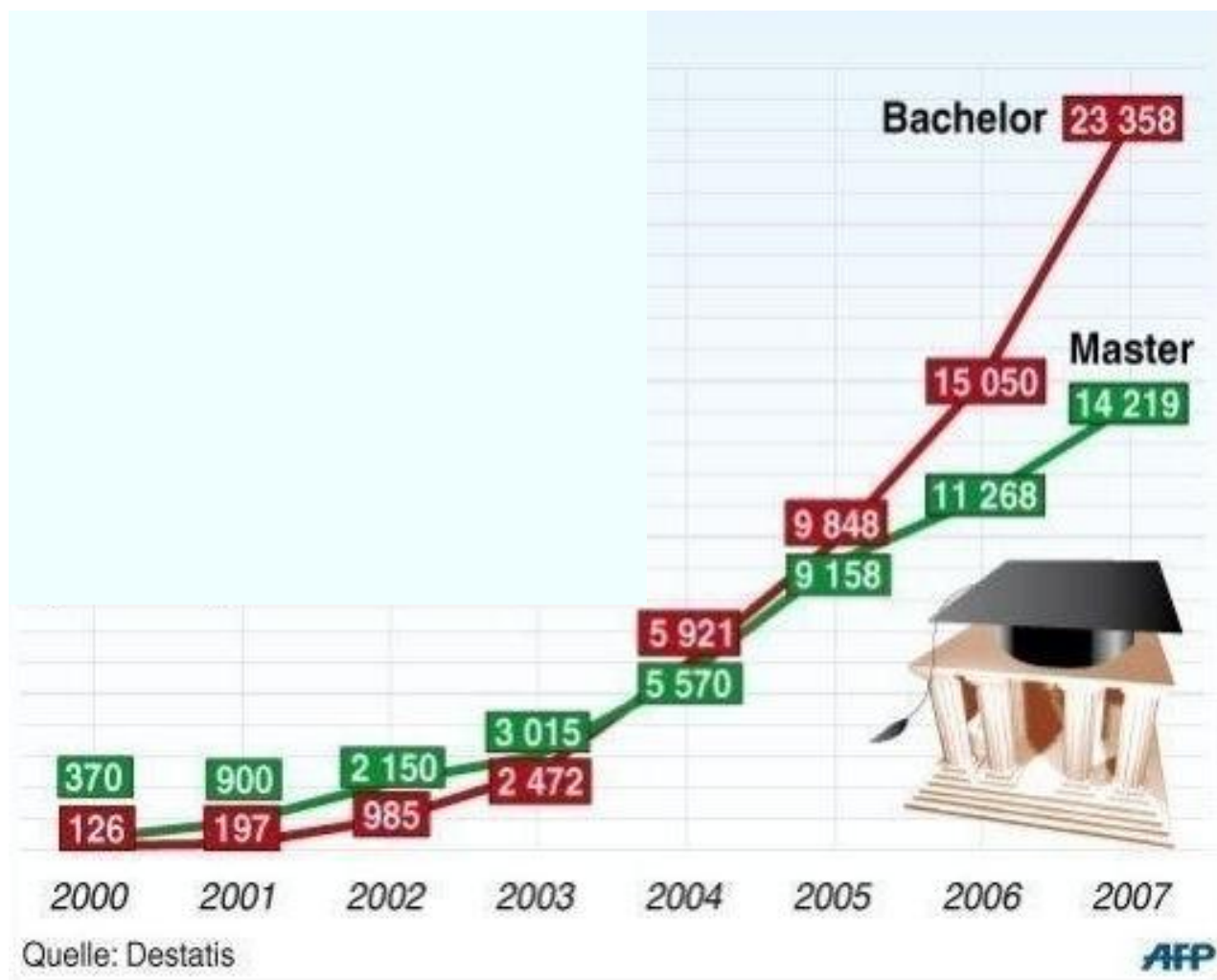
OECD - Education Report

Share of study beginners at universities
and universities of applied sciences
2008 as percent of the respective vintage

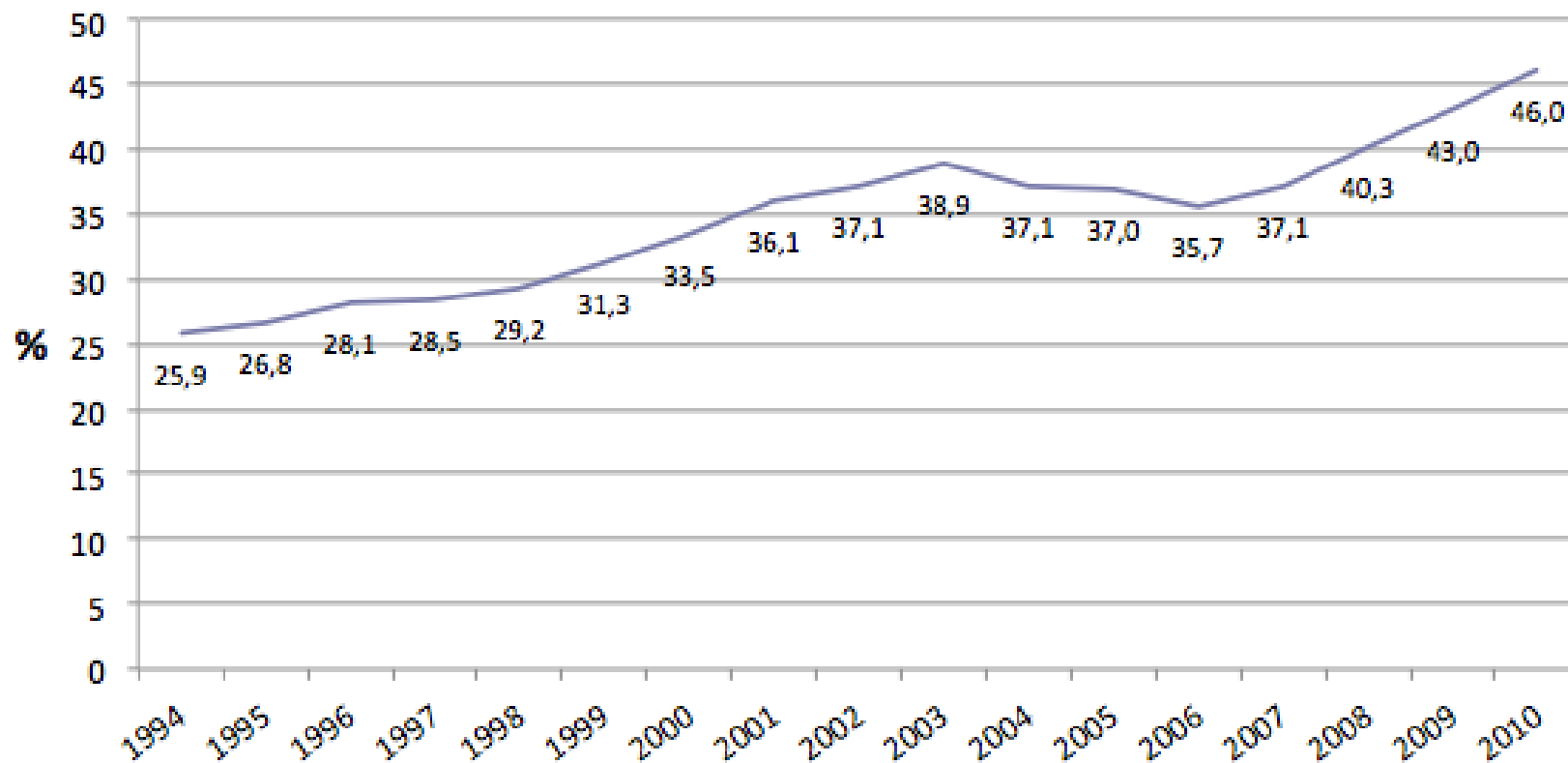
Spending on education
in percent of the respective
gross domestic product (GDP)



N of graduates in Germany 2000 - 2007



Study beginner quote (Germany)



4175N9

DEUTSCHE BUNDESBANK

Banknote

10



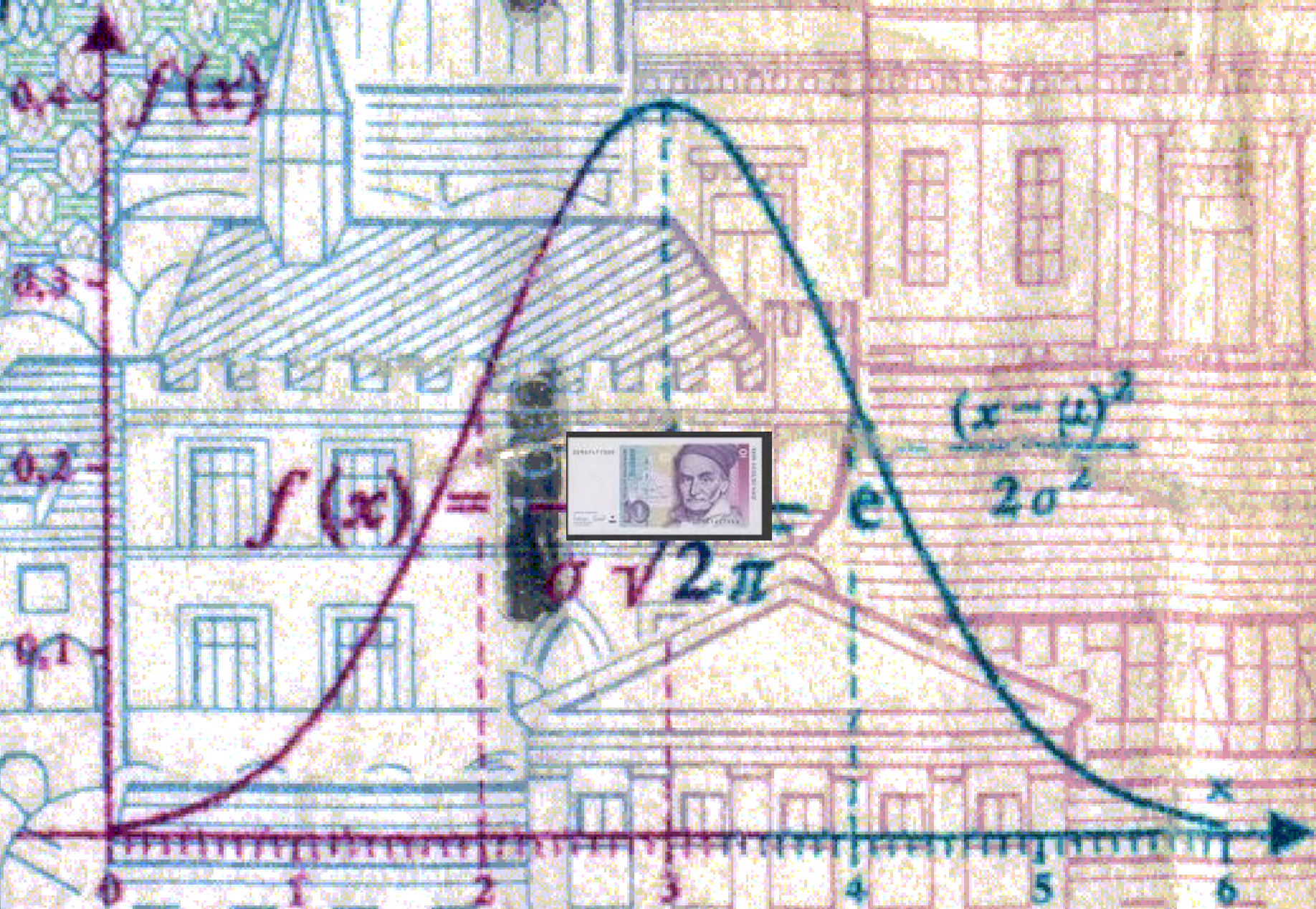
1777 - 1855 Carl Friedr. Gauß

10

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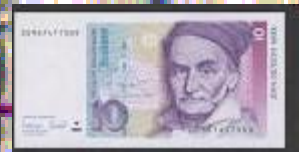
Bank
Gauß





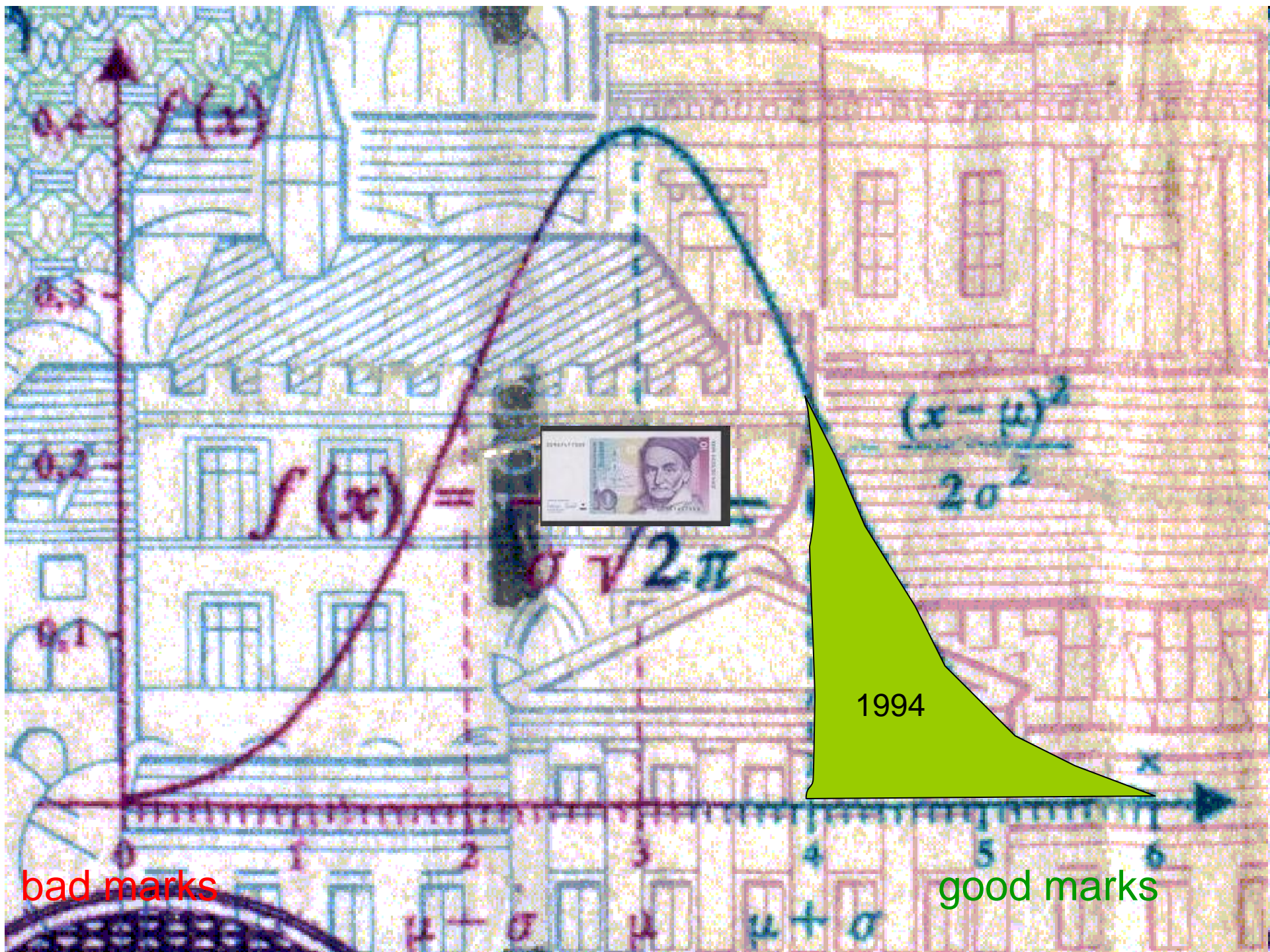
bad marks

good marks



$$f(x) = \frac{1}{\sigma \sqrt{2\pi}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

$\mu - \sigma$ μ $\mu + \sigma$



bad marks

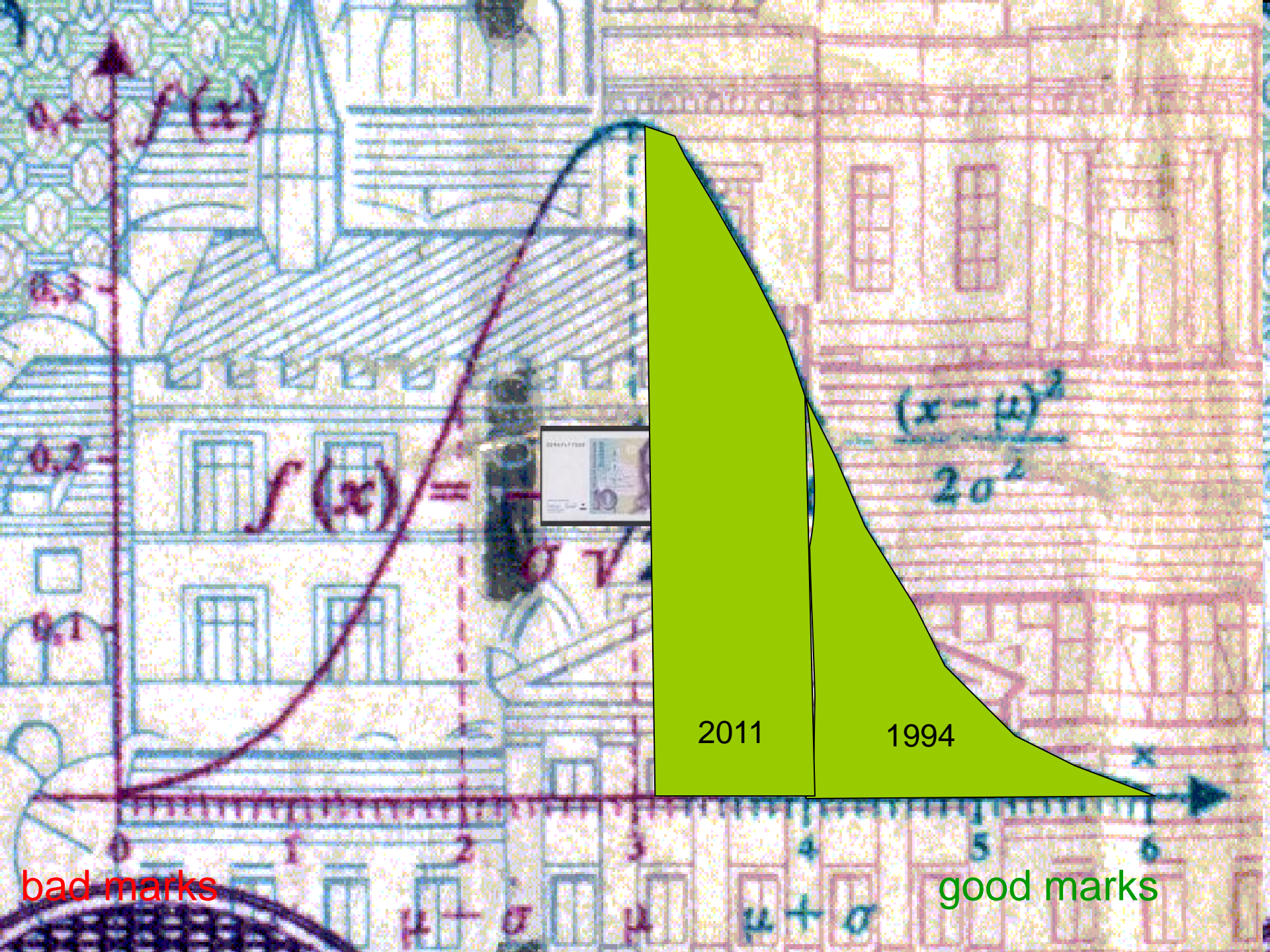
good marks

1994

$$f(x) = \frac{1}{\sigma \sqrt{2\pi}} \exp\left(-\frac{(x-\mu)^2}{2\sigma^2}\right)$$

$$\frac{(x-\mu)^2}{2\sigma^2}$$





$f(x)$

0.3

0.2

0.1

$f(x) =$

$=$

$\frac{1}{\sigma\sqrt{2\pi}}$

$\frac{(x-\mu)^2}{2\sigma^2}$

2011

1994

bad marks

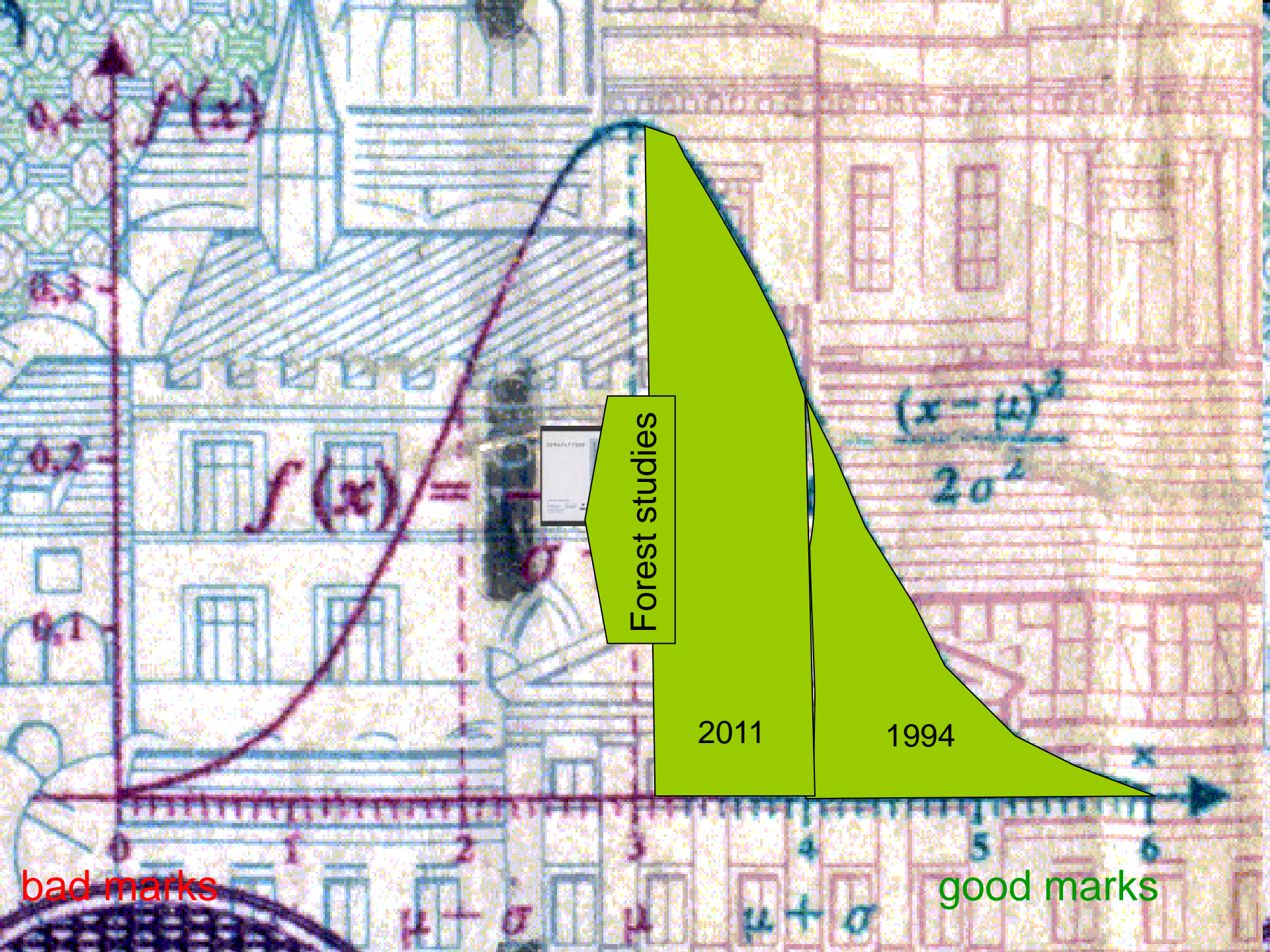
good marks

$\mu - \sigma$

μ

$\mu + \sigma$

x



$f(x)$

0.3

0.2

0.1

bad marks

$f(x)$

$=$

Forest studies

Forest studies

2011

1994

$$\frac{(x-\mu)^2}{2\sigma^2}$$

marks

good marks

$\mu - \sigma$

μ

$\mu + \sigma$

0

1

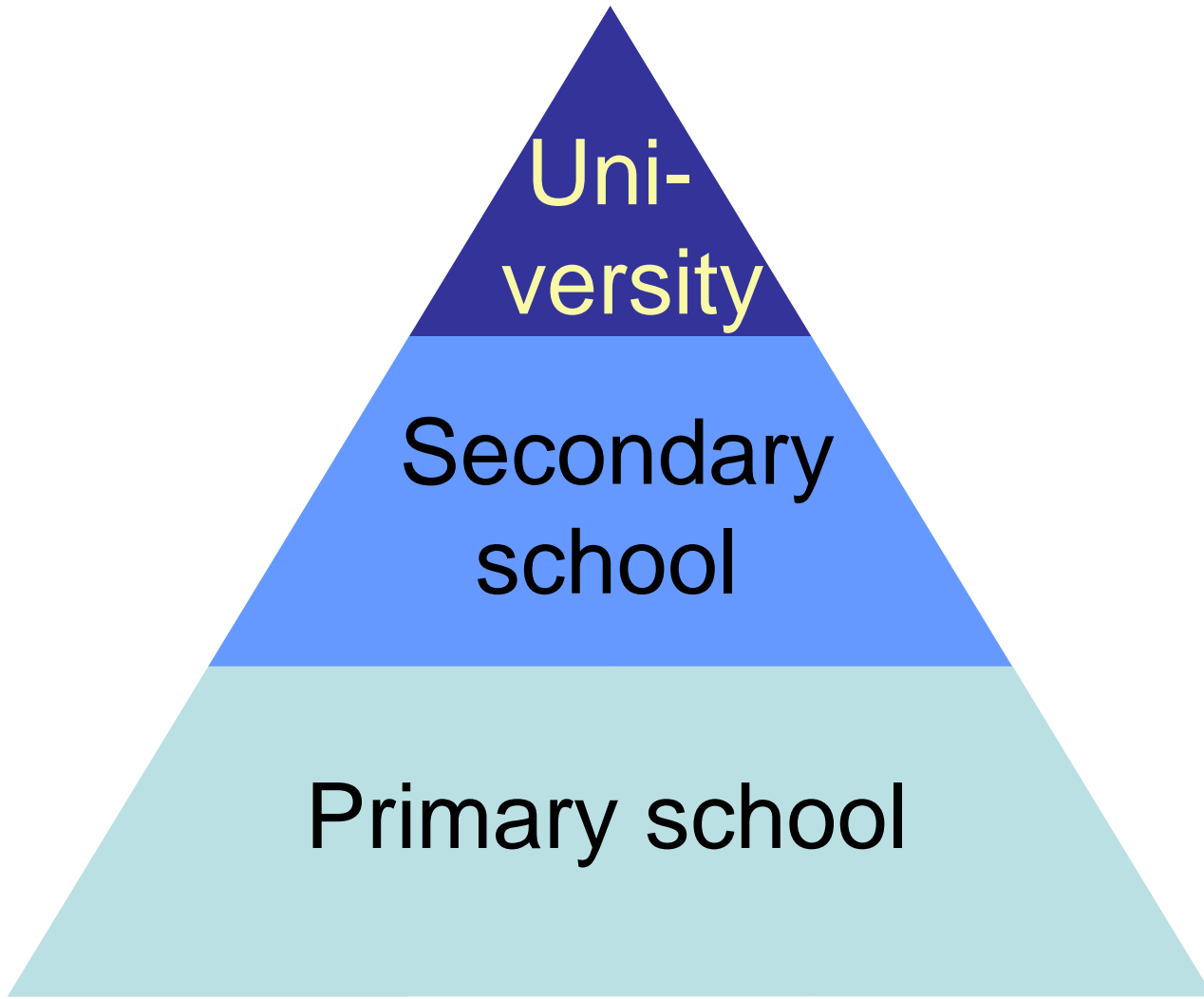
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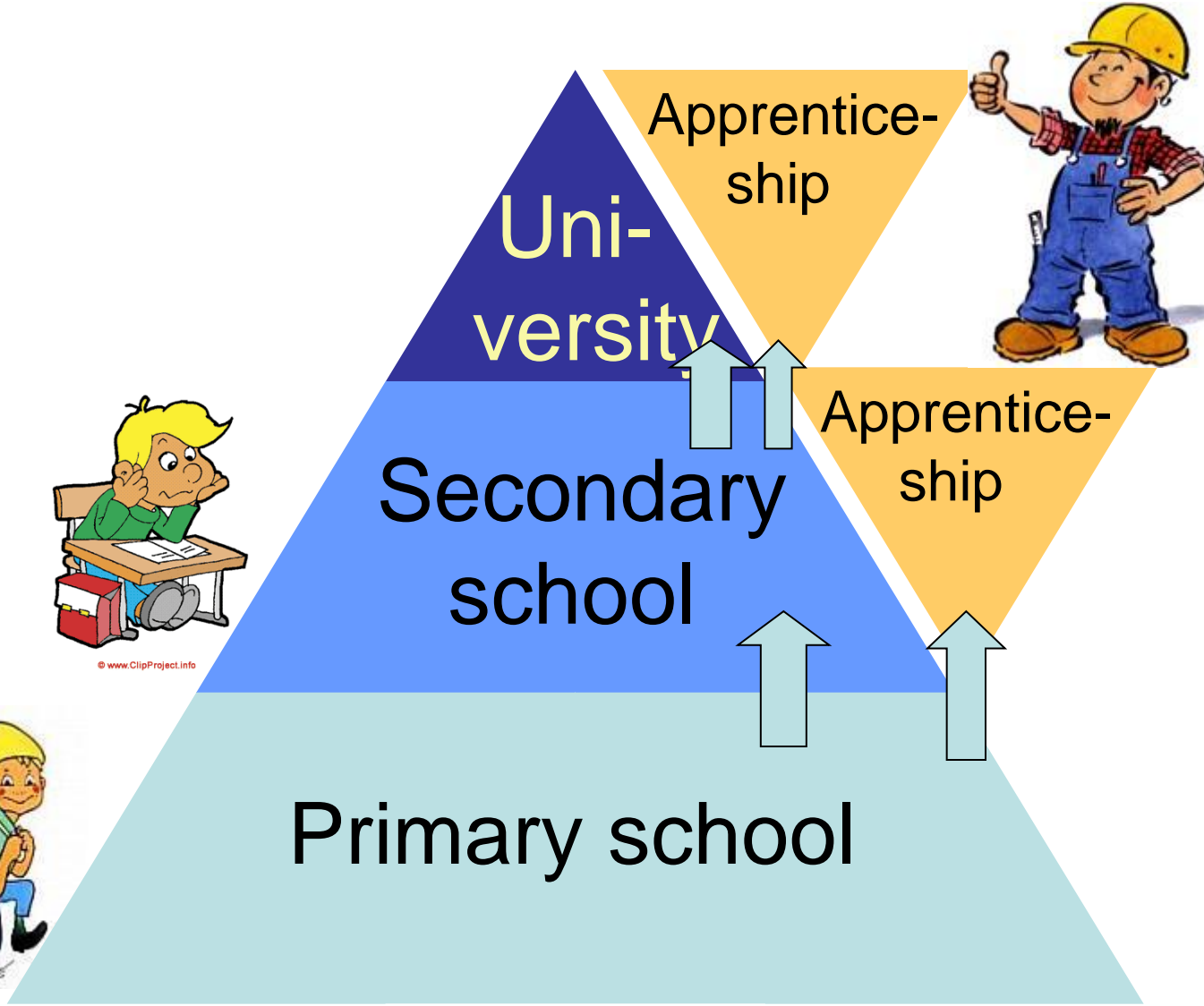
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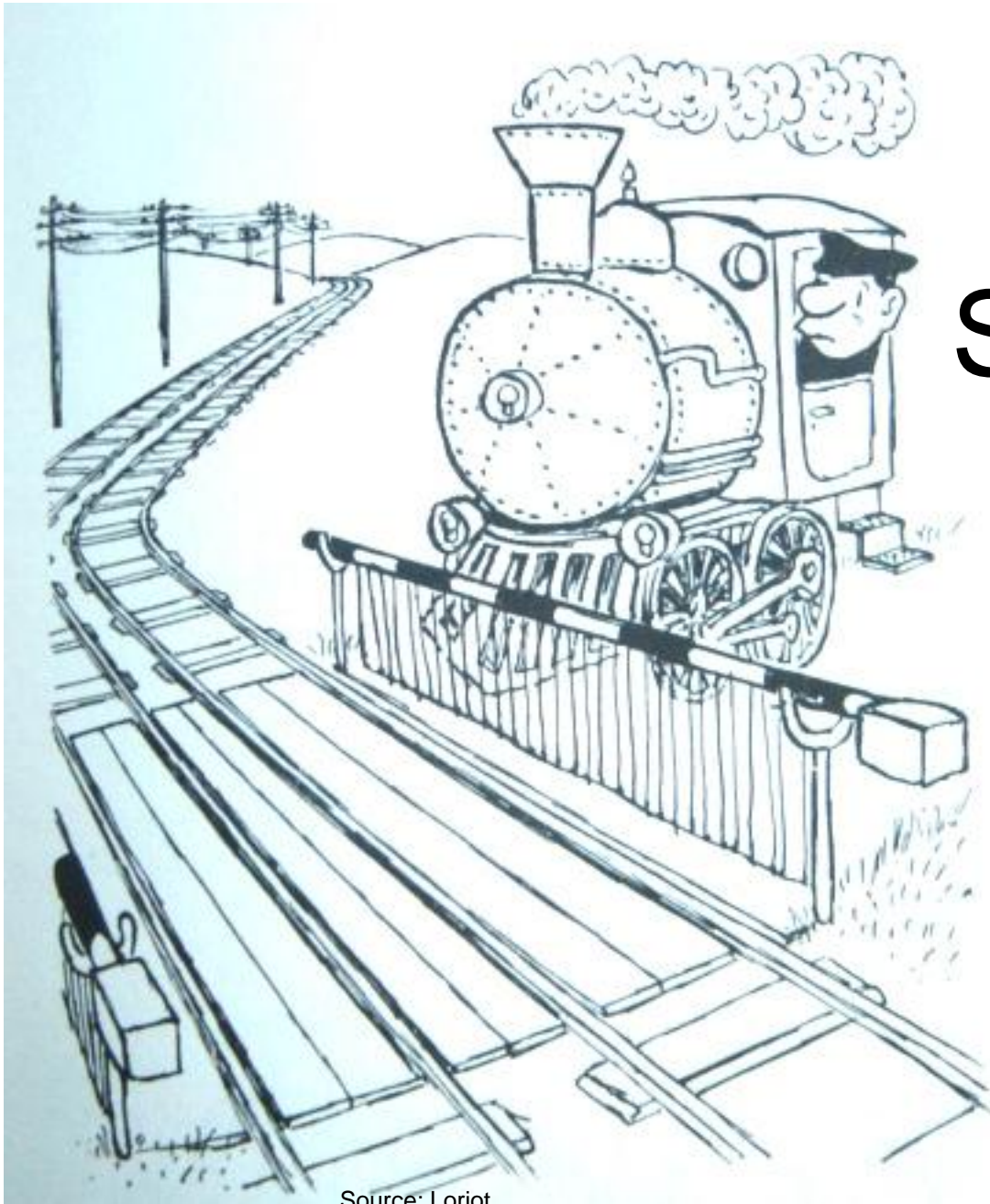
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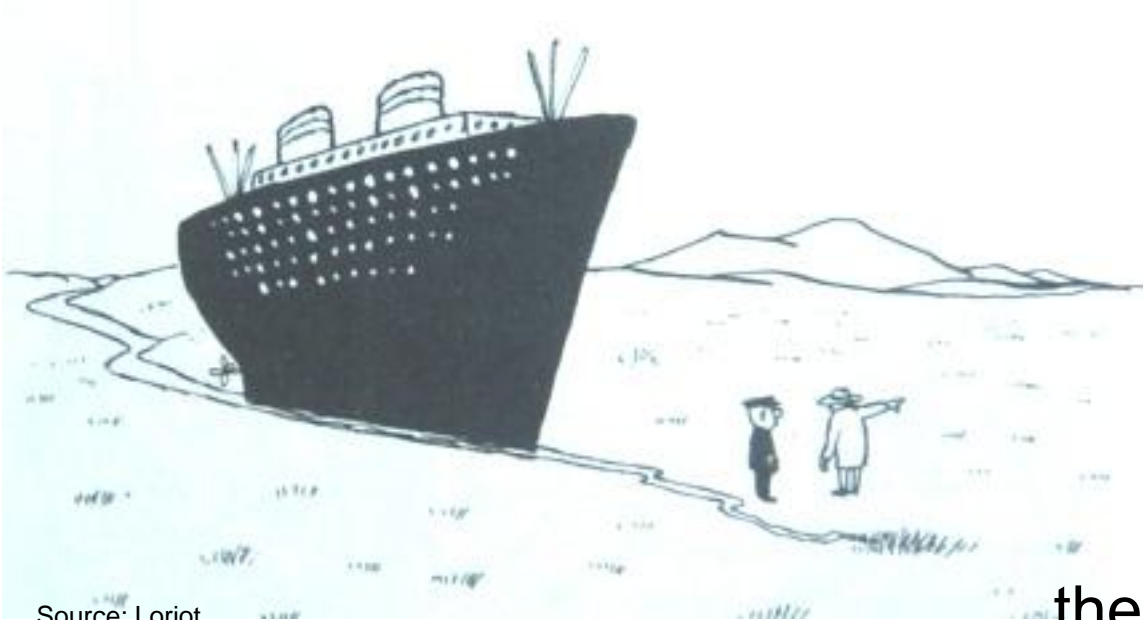




Source: Loriot

Summarized:

**Are we
on the
right way?**



Source: Lorient

...the answers differ a lot –
depending on the person
or organization we ask....

Thank you for your interest!

