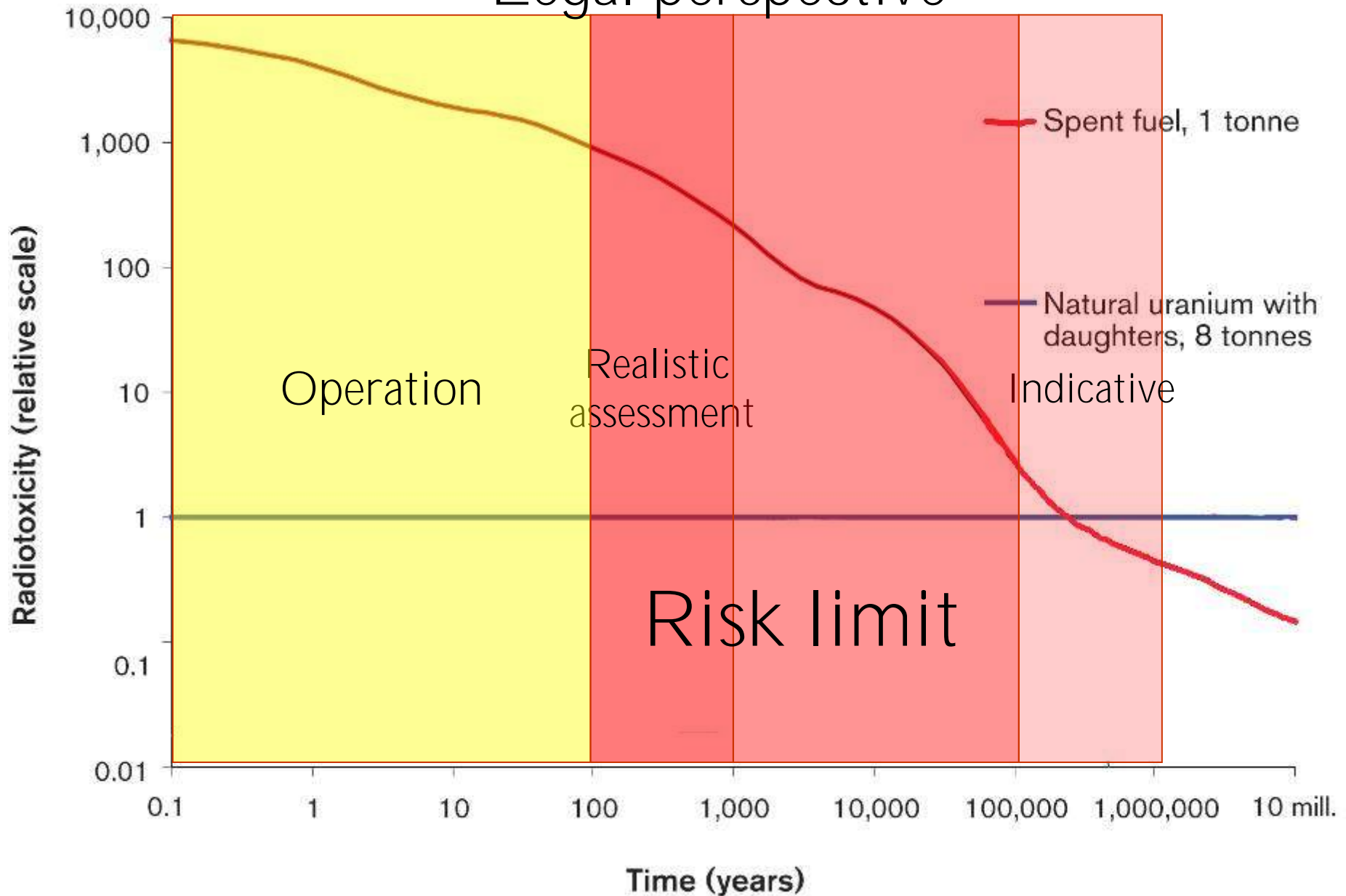


Future humans assessment

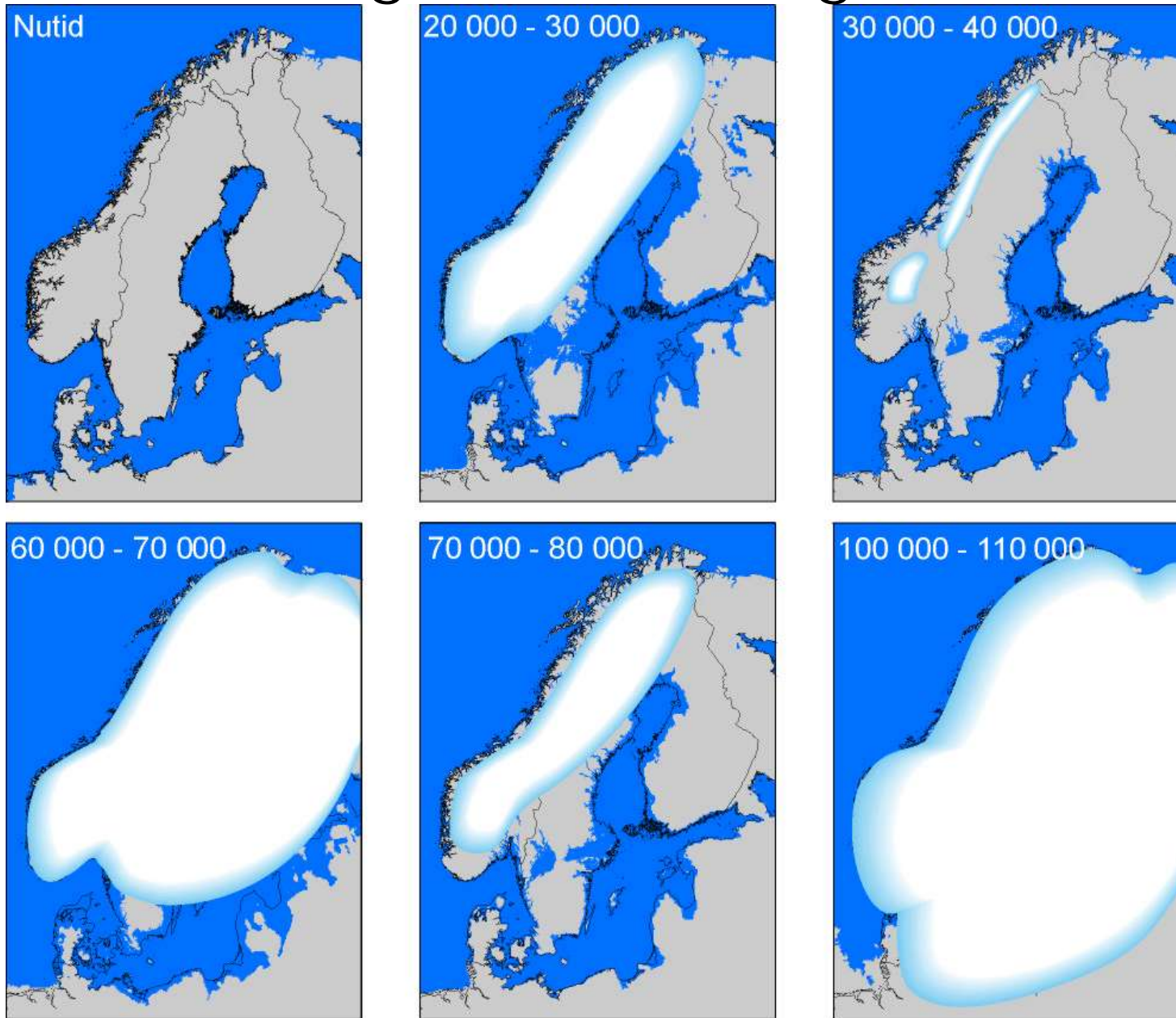
Ulrik Kautsky, SKB

The time perspective

Legal perspective



Long-term changes



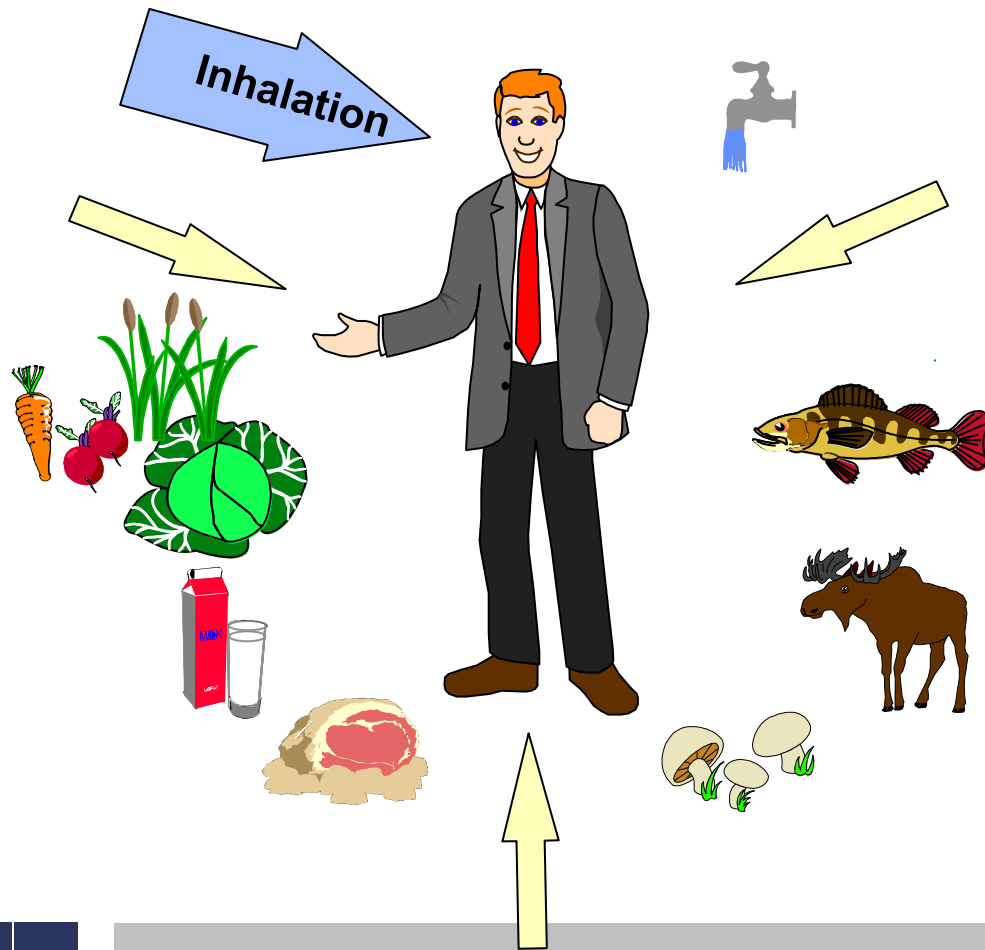
What are humans doing in the future?

- Eat
- Drink
- In a more or less sophisticated way

Demand Human physiology

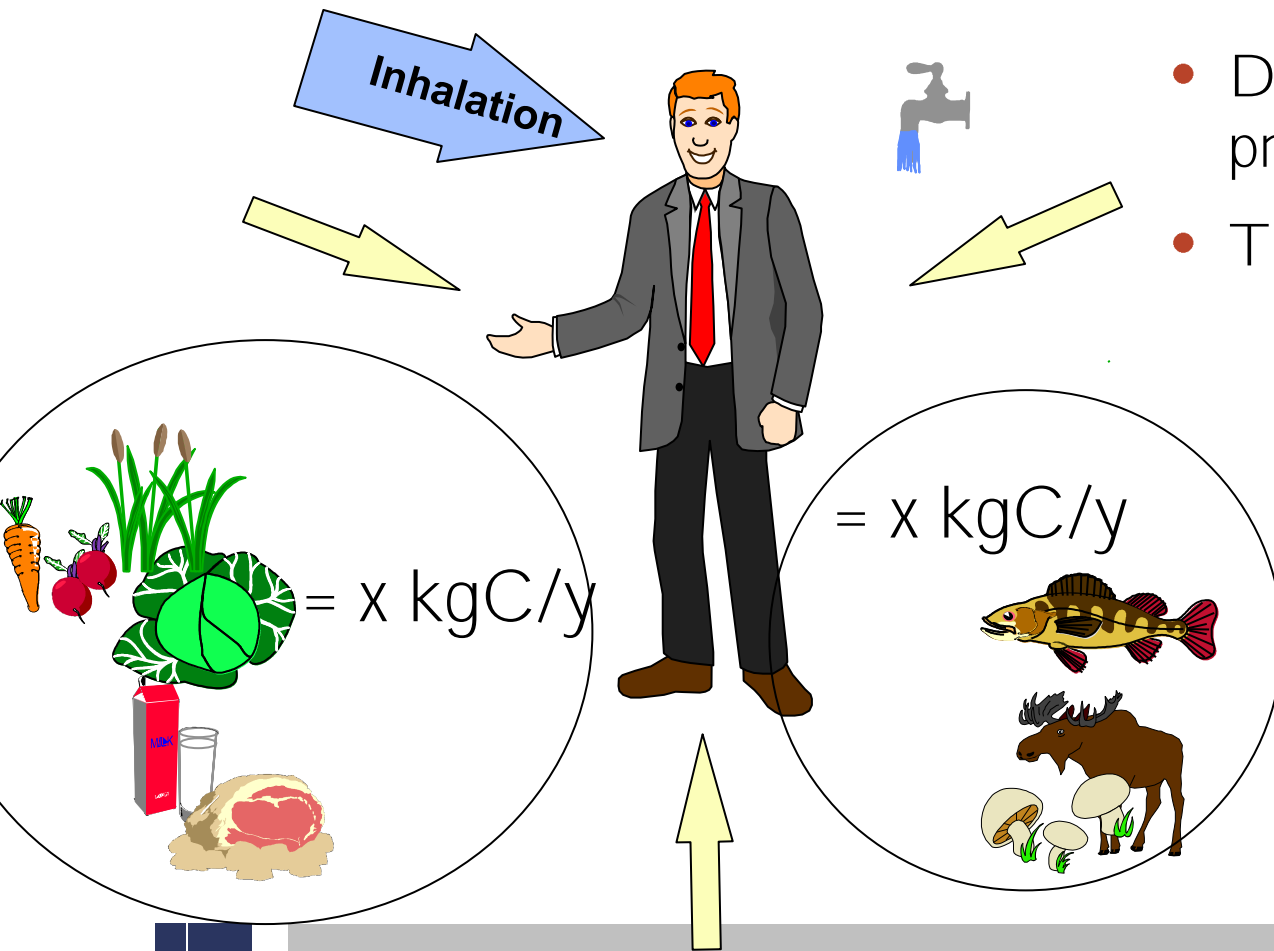
- Humans over age 15 year need 60-290 kgC/y to cover their metabolic costs
 - Reference man 110kgC/y (~labour man)
- Quality, Vitamins, proteins etc
- Water

Supply and demand traditional



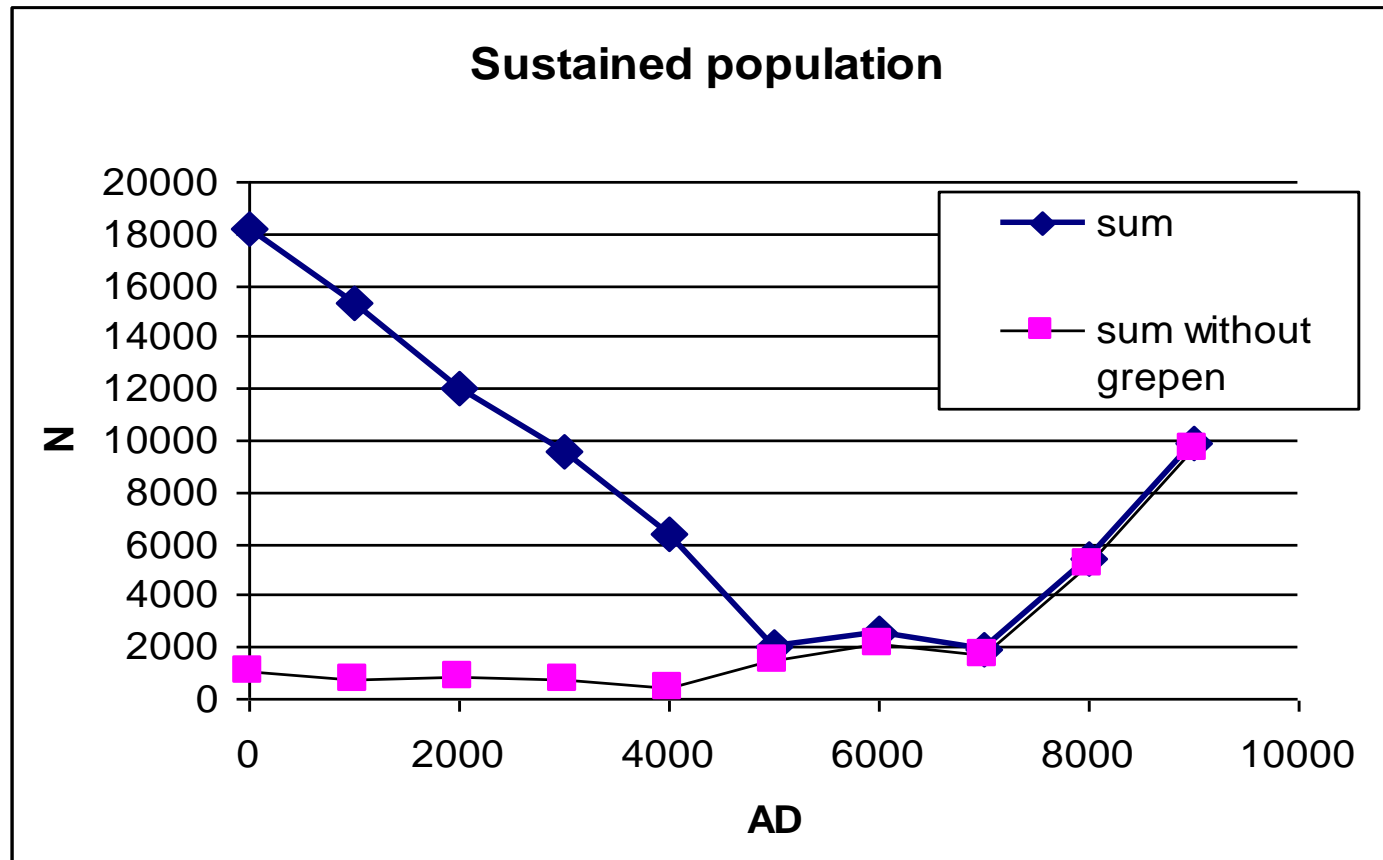
Water	N	l/year	600
Milk	N	l/year	200
Meat	N	kg/year	55
Vegetables	N	kg/year	40
Root-crops Potatoes	N	kg/year	70
Cereals	N	kg/year	80
Soil	N	kg/year	0.01
Fish	N	kg/year	30
Crustacea	N	kg/year	2
Algae	N	kg/year	2
Exposure time*	T	h/year	100
Inhalation rate	T	m ³ /h	1

Normalisation to energetic content

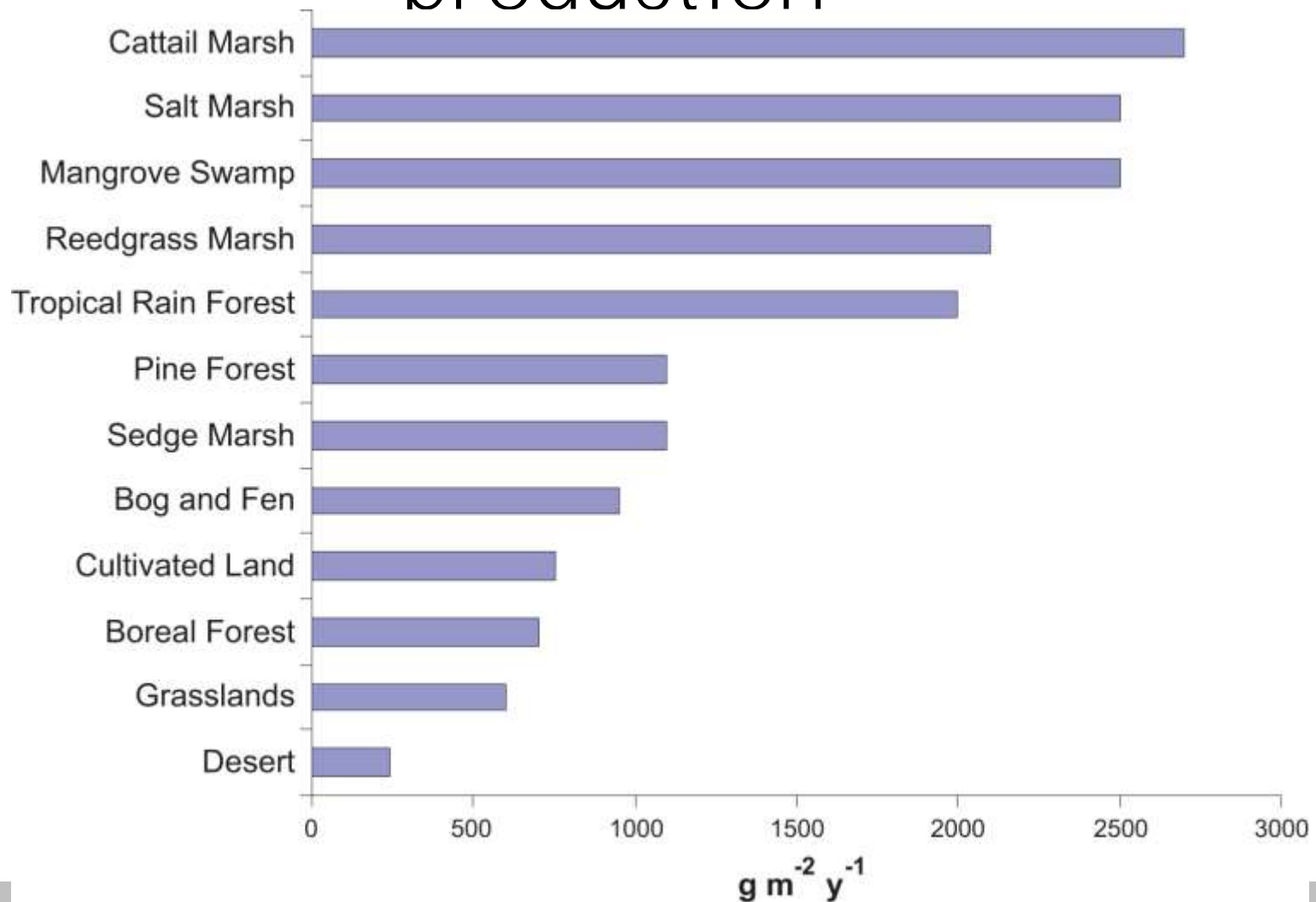


- Total intake 110kgC/y
- Distributed proportionally to the preproduction in kg/C
- Thus what is the production

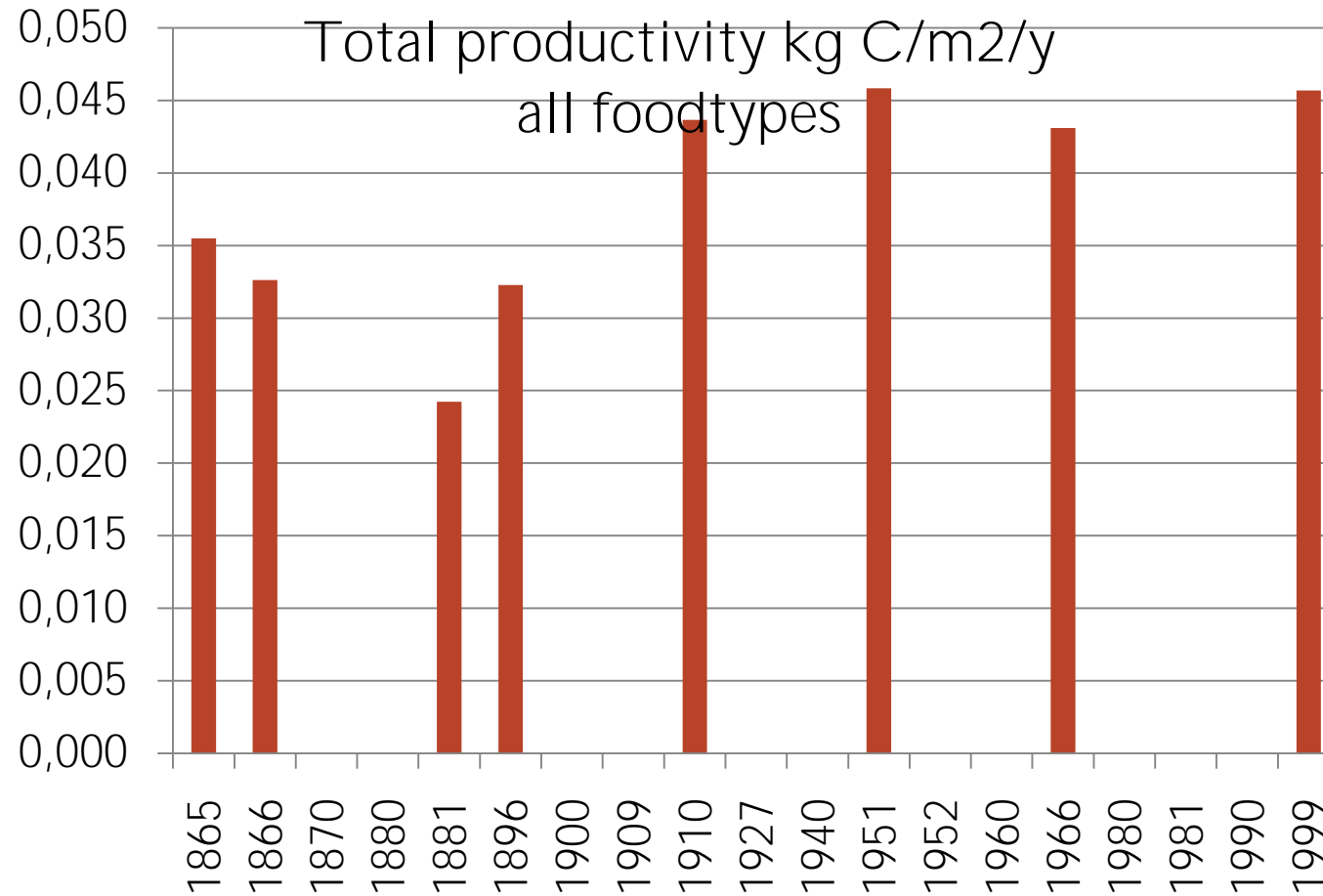
Sustainable population



Small global variation of Net primary production



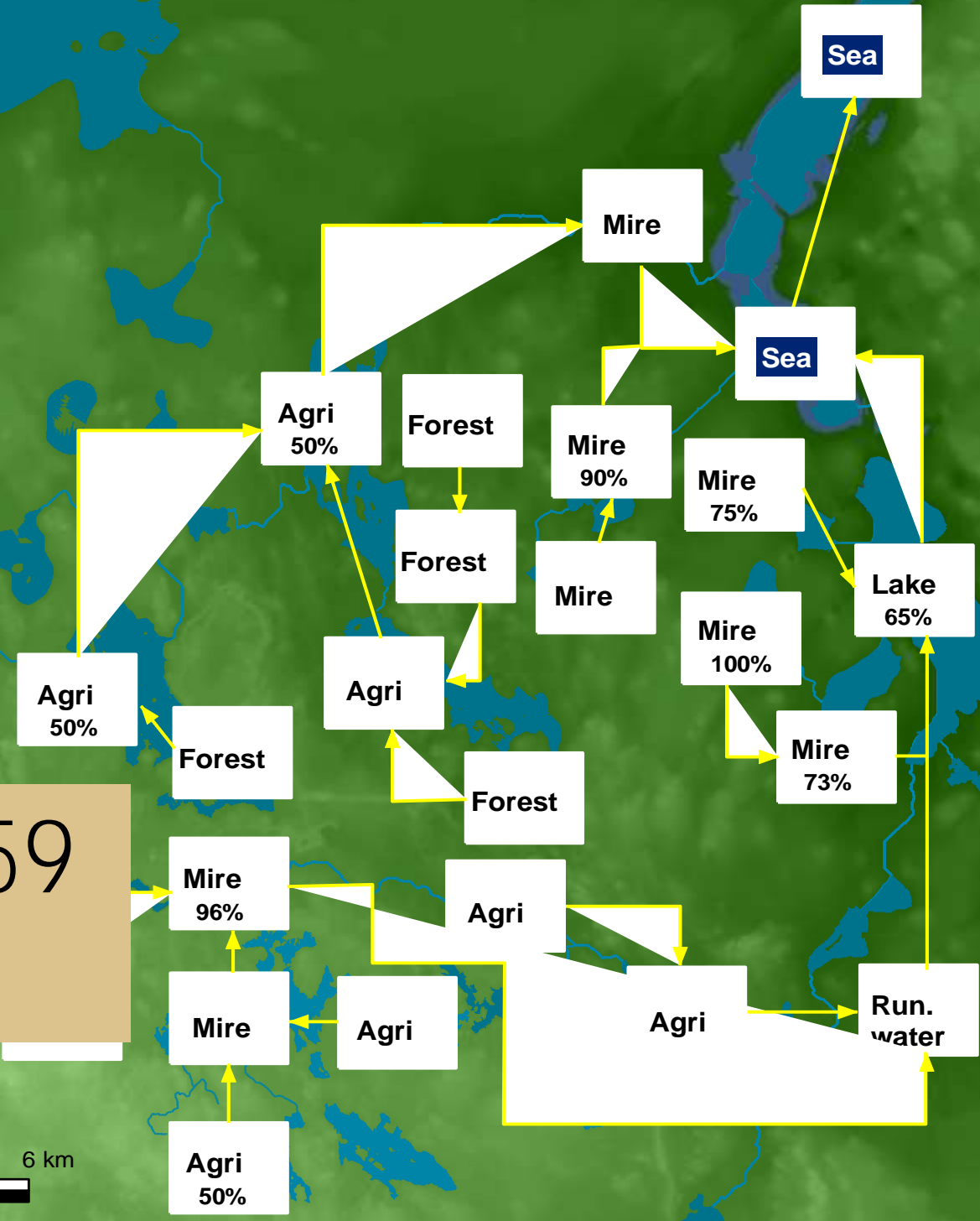
Total food production of a parishment in Småland



9000 AD



0.000095359
person



Humans

- Humans assumed to be similar with today
 - Dose conversion factors are given by human today
 - \Rightarrow food and liquid intake given by ICRP reference man
- Annual lifetime average exposure for adult (50y) ICRP
- Humans are assumed to utilise their environment maximally but sustainable
- Humans are assumed to select the most unfavourable exposure
 - Diet
 - Occupancy
 - Inhalation

\Rightarrow The most exposed individual is that persons which can utilise the environment maximally over the lifetime with the maximum concentration

- Smallest human group 10 persons ?