



Importance of Quality Infrastructure

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Bureau
♦ **I**nternational des
♦ **P**oids et
♦ **M**esures



Outline

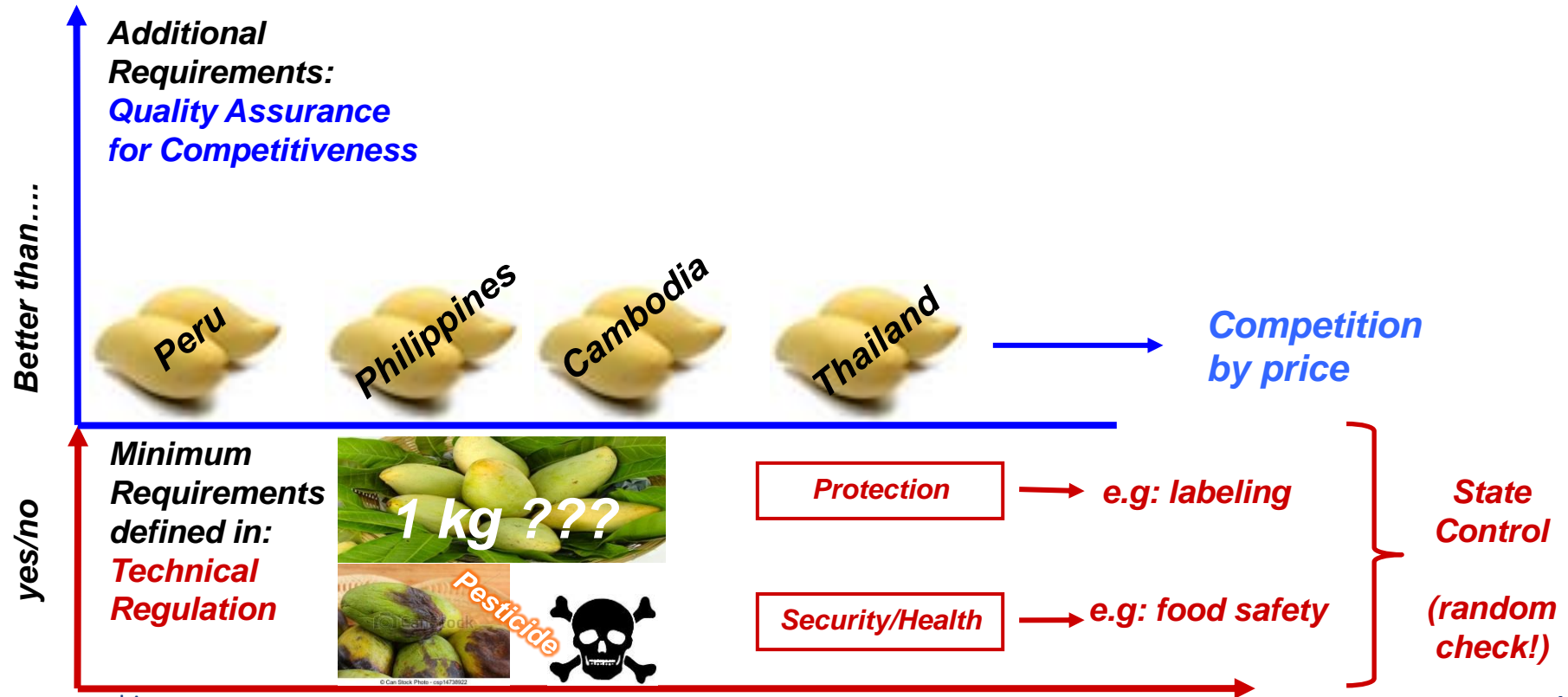
- The book:
*„The answer to the global quality challenge:
A National Quality Infrastructure“*
describes the QI components and their interaction in a systemic approach.
- The next slides extend this approach to the role of QI in the national economy and for trade. This leads to a development strategy for a NQI under consideration of the national circumstances.
- A market economy is driven by competition (mainly buyer's requirements and consumers expectations) as well as innovations from creative entrepreneurs supported by investigation, research & development. Nevertheless, protection issues for consumers, society, environment, etc. as well as market transparency and fair trade must be guaranteed too.
- The NQI must provide services for all these challenges.

Purpose of the QI

A National Quality Infrastructure, which functions as an independent and impartial technical approach must be able to contribute to the three key application fields:

- ***Protection purposes (state regulation)***
- ***Market demand (buyer's requirements)***
- ***Innovations (entrepreneur's creativity)***

Protection and competition by price



Protection, competition and innovation



The concept applies for all products and supply chains:



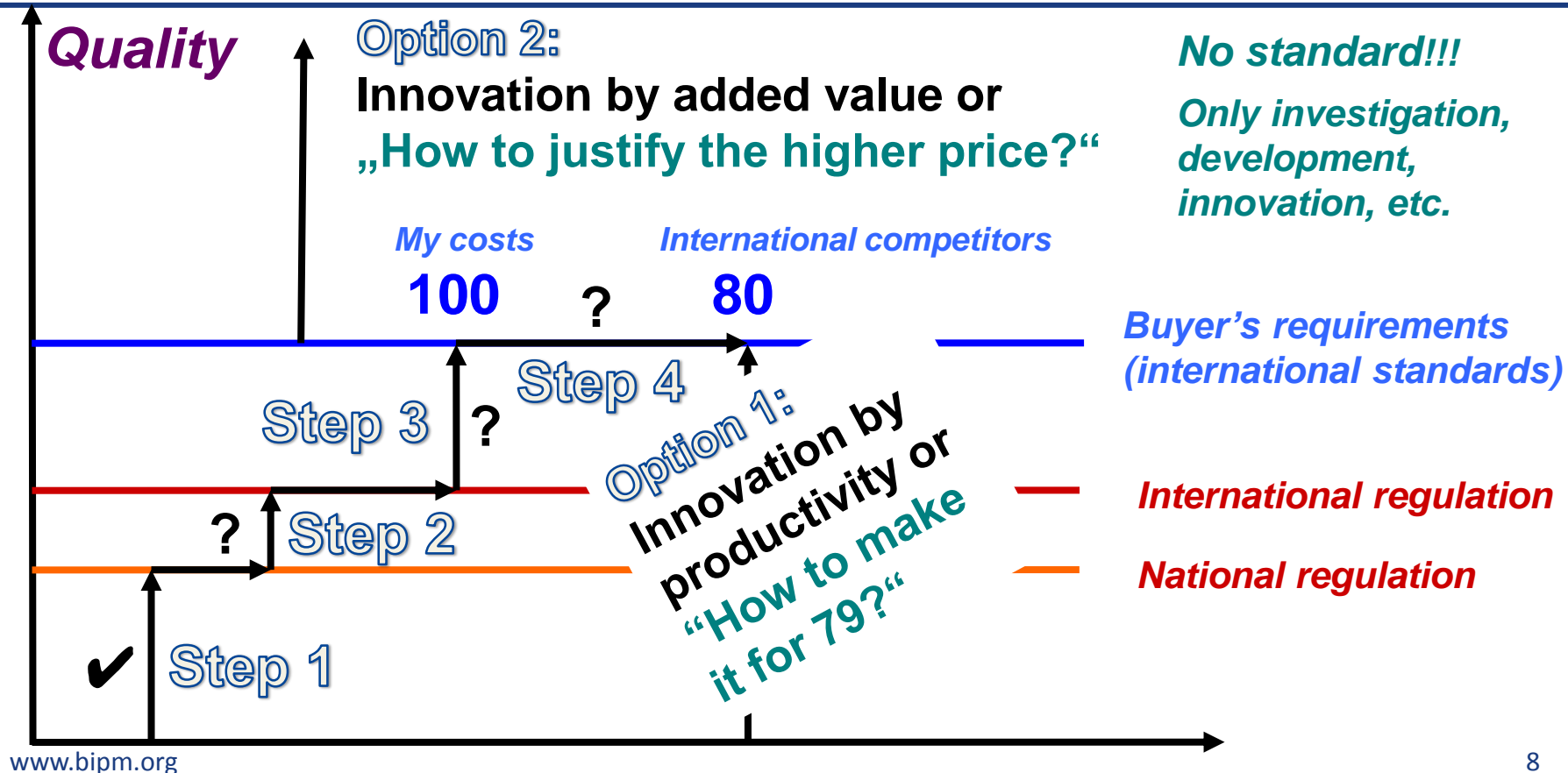
Challenge for the productive sector

The challenge for the productive sector is threefold:

- ***Compliance with state regulation and control***
- ***Satisfaction of buyers in price and performance***
- ***Innovative creativity for market advantages***

How to achieve this in one step?

Entrepreneur's challenge

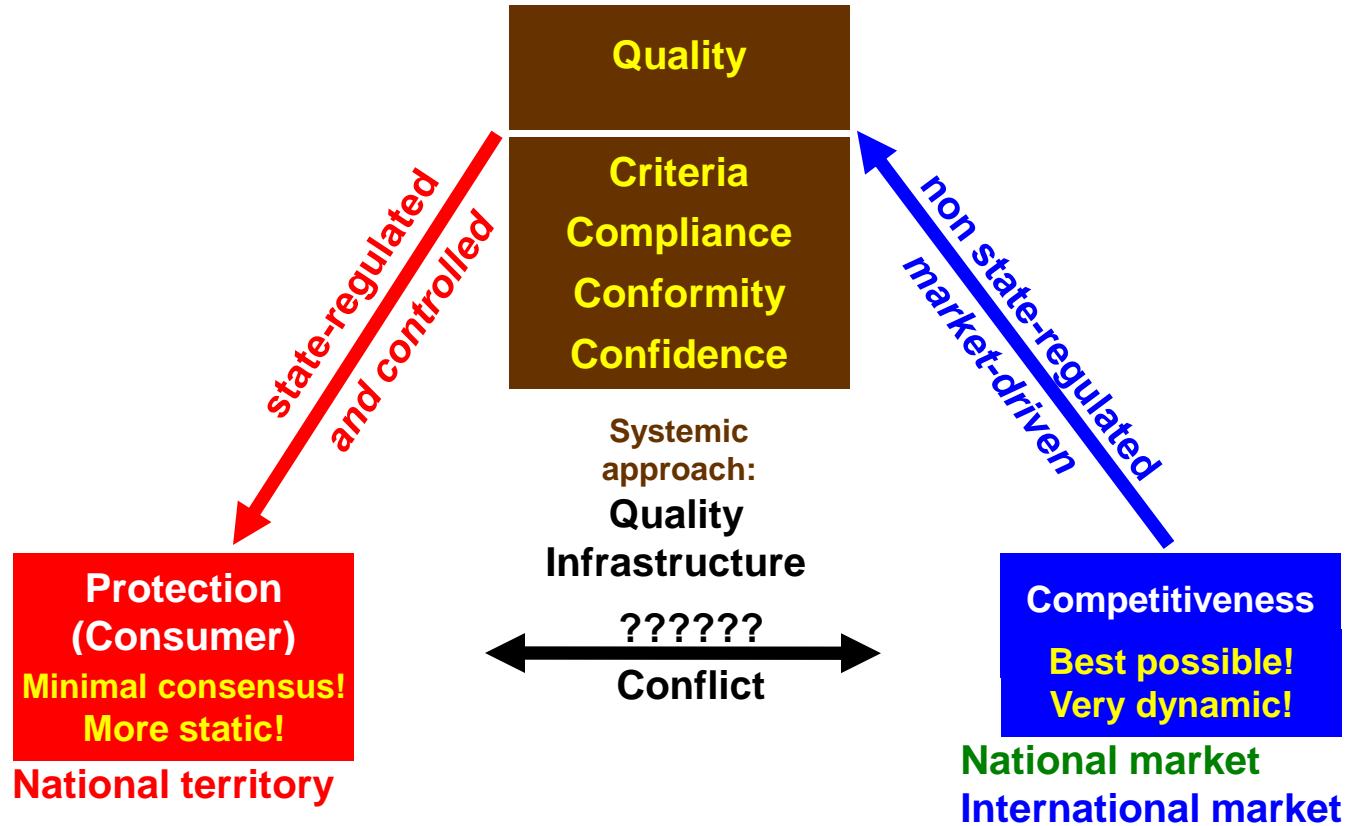


What does it mean for the National Quality Infrastructure and the applications:

- ***Compliance with state regulation and control***
- ***Satisfaction of buyers in price and performance***
- ***Innovative creativity for market advantages***

How to achieve all this in one single NQI?

Quality Triangle

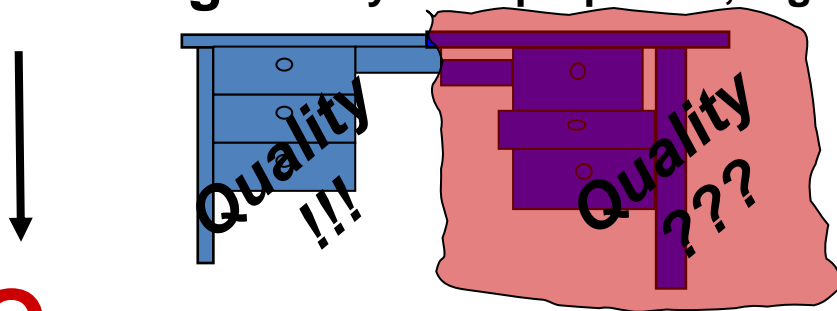


Technical components of Quality Infrastructure

Sandardization = Definition of properties, dimensions, tolerances, etc.

Metrology = Guarantee of exact and reliable measurements

Testing = Analysis of properties, ingredients, characteristics, etc.



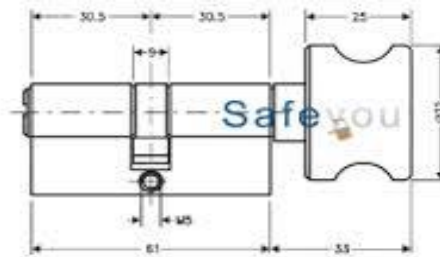
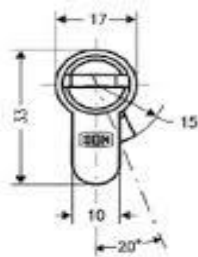
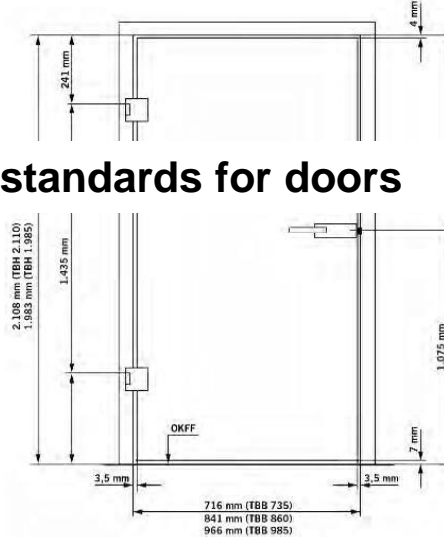
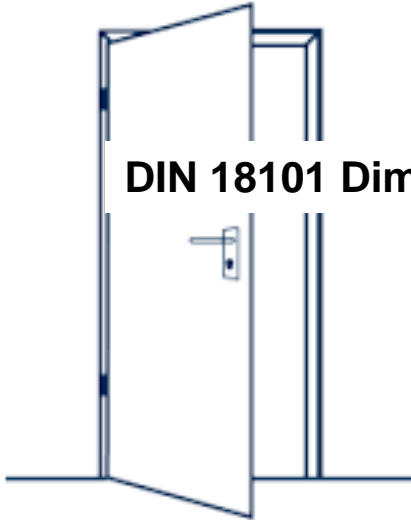
Quality Management = Reliable application of quality standards

└─ **C**ertification = Conformity with requirements defined in standards

└─ **A**ccreditation = Recognition of **technical competence**

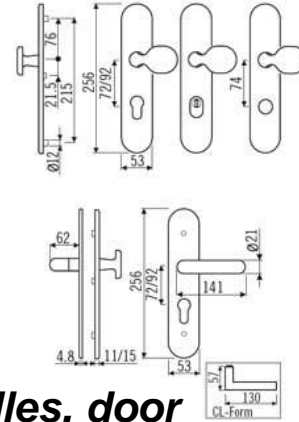
Standardization & QI

DIN 18101 Dimensional standards for doors

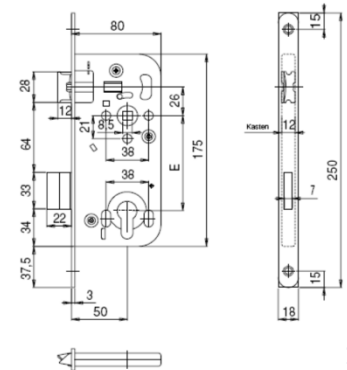
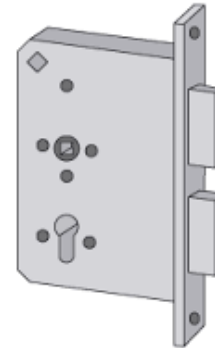


DIN 18251 Locks for doors

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DIN 18255: Door handles, door plates, door rosettes



Standardization & QI

DIN 18101 Dimensional standards for doors

Same measurements due to standardization.....

DIN 18255: Door handles, door plates, door rosettes

DIN 18251 Locks for doors

Standardization & QI



DIN 18255: Door handles, door plates, door rosettes

DIN 18101 Dimensional standards for doors



DIN EN 1935 Single-axis door and window hinges



DIN 18251 Locks for doors



Standardization & QI

.....but innovation and creativity

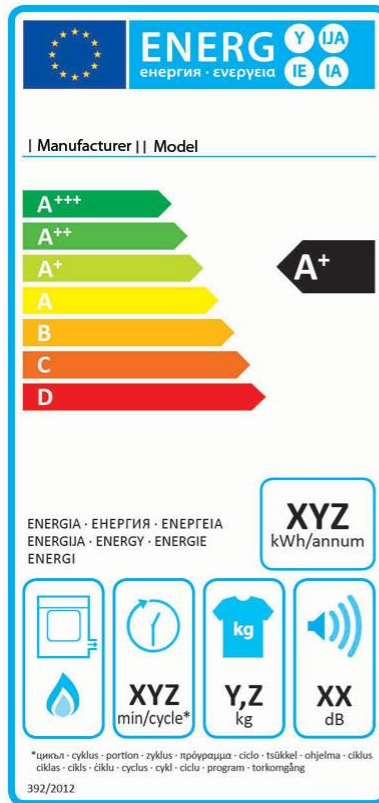
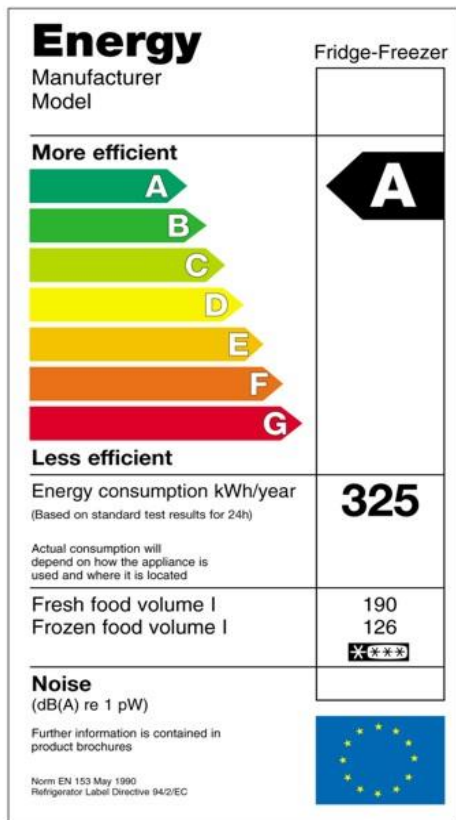
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for doors

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Technical Regulation & QI



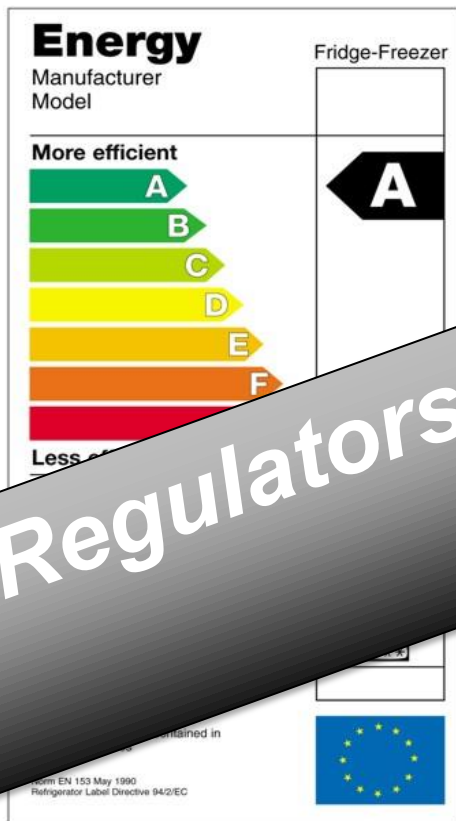
1. **Energy Efficiency Rating**
A+++ is the most efficient, and D is the least efficient, based on the product's energy consumption.

2. **Annual Energy Consumption**
The annual energy consumption (in kWh per year) for each product is calculated using specific EU-defined criteria. Here, for tumble dryers, the figure is calculated based on the standard cotton program at full and half load.

3. **Product-specific information**
You'll also find images showing extra data related to the product, such as capacity, water consumption and noise levels.

Technical Regulation & QI

Regulators benefit from market-driven innovation!



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National Metrology References

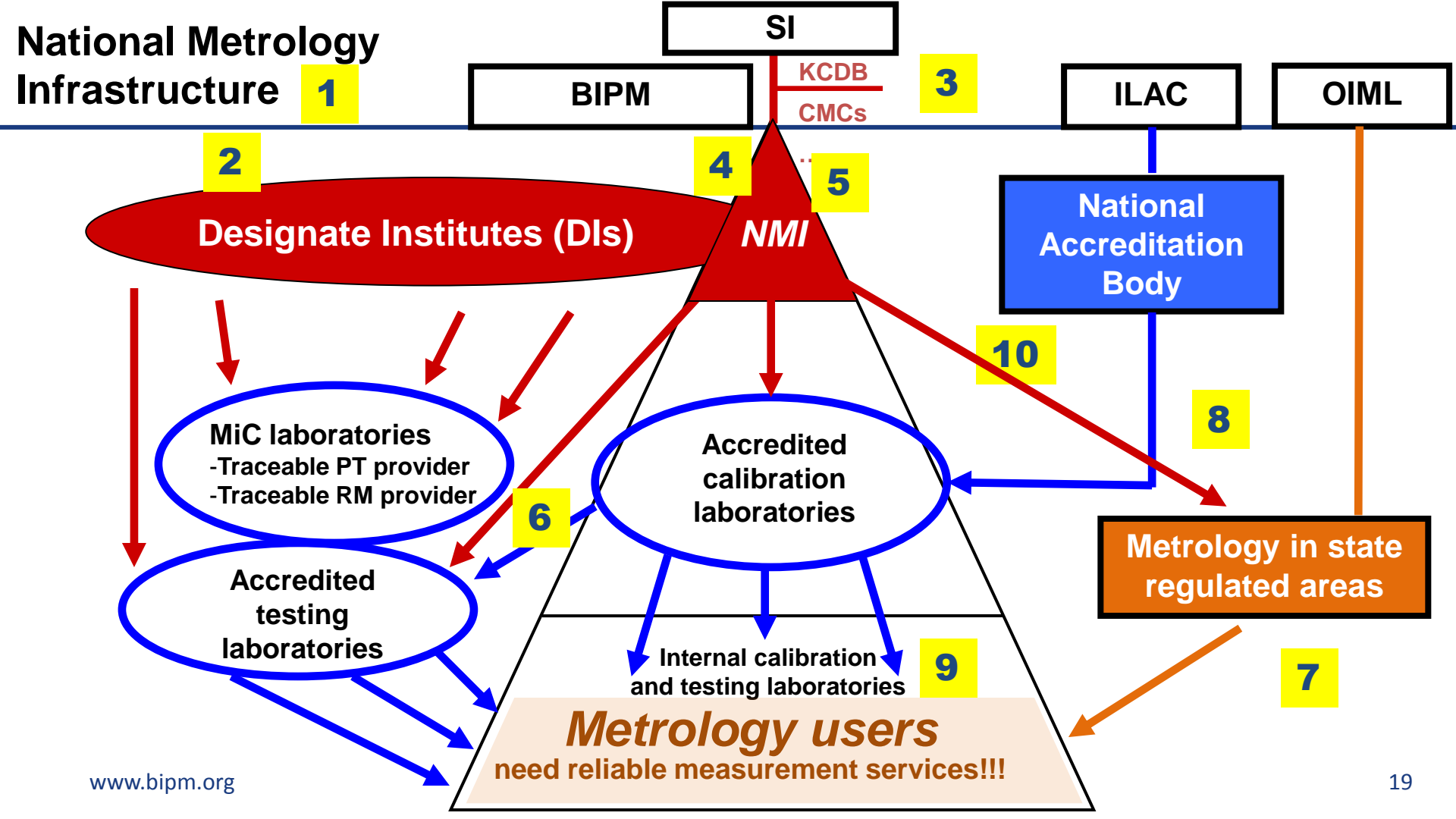
(metrological reference for the country, no matter, which level.)

Metrology in the state-regulated areas

(Practically each measurement mentioned in legislation and TR, which requires enforcement, control and sanctions)

Metrology in market driven (non state-regulated) areas

(All other measurements under other requirements and drivers than the State: Standards, AB, buyer, tender, competition, innovation, science & technology, research & investigation, etc.)

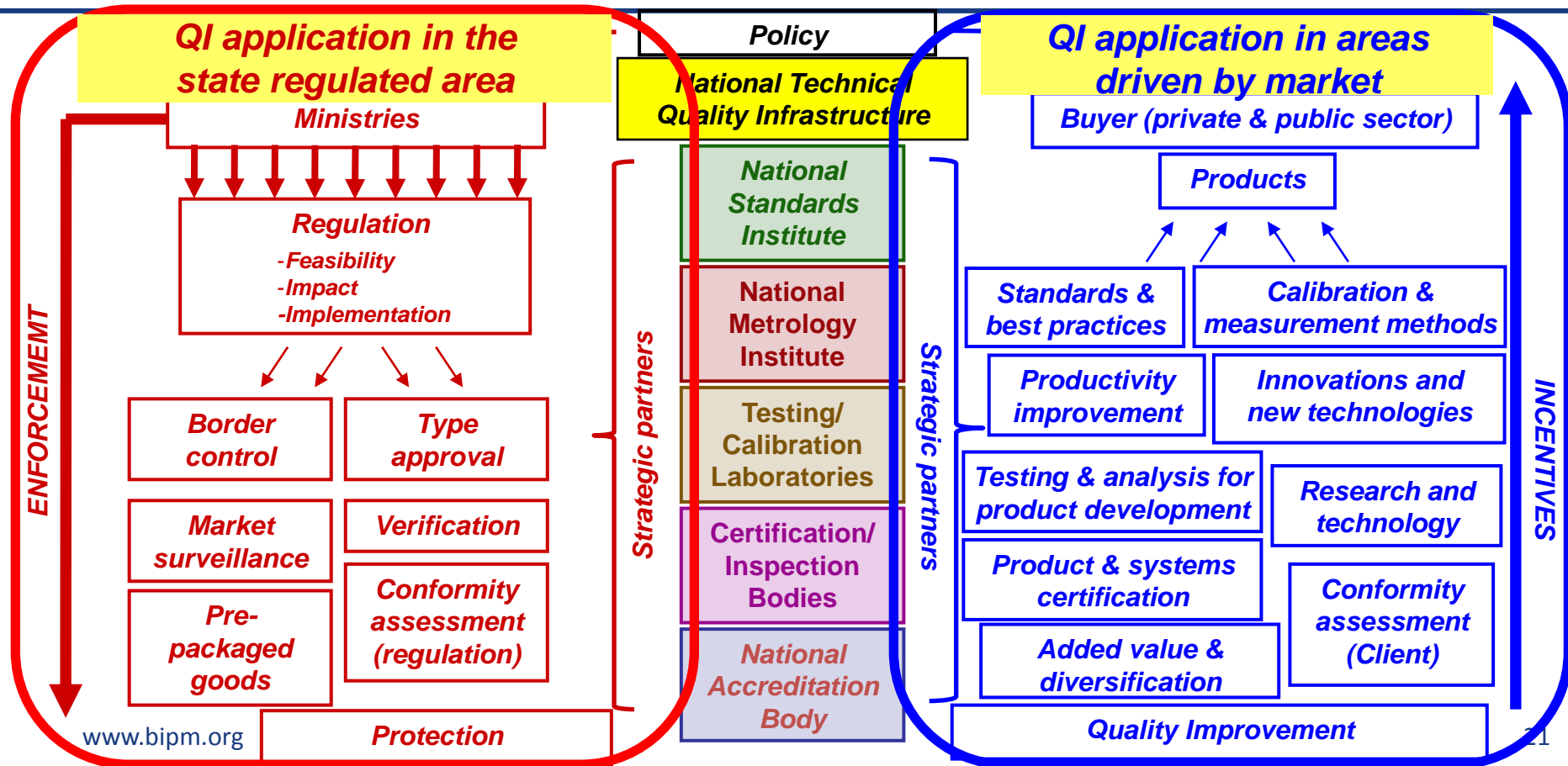


National Metrology Strategy

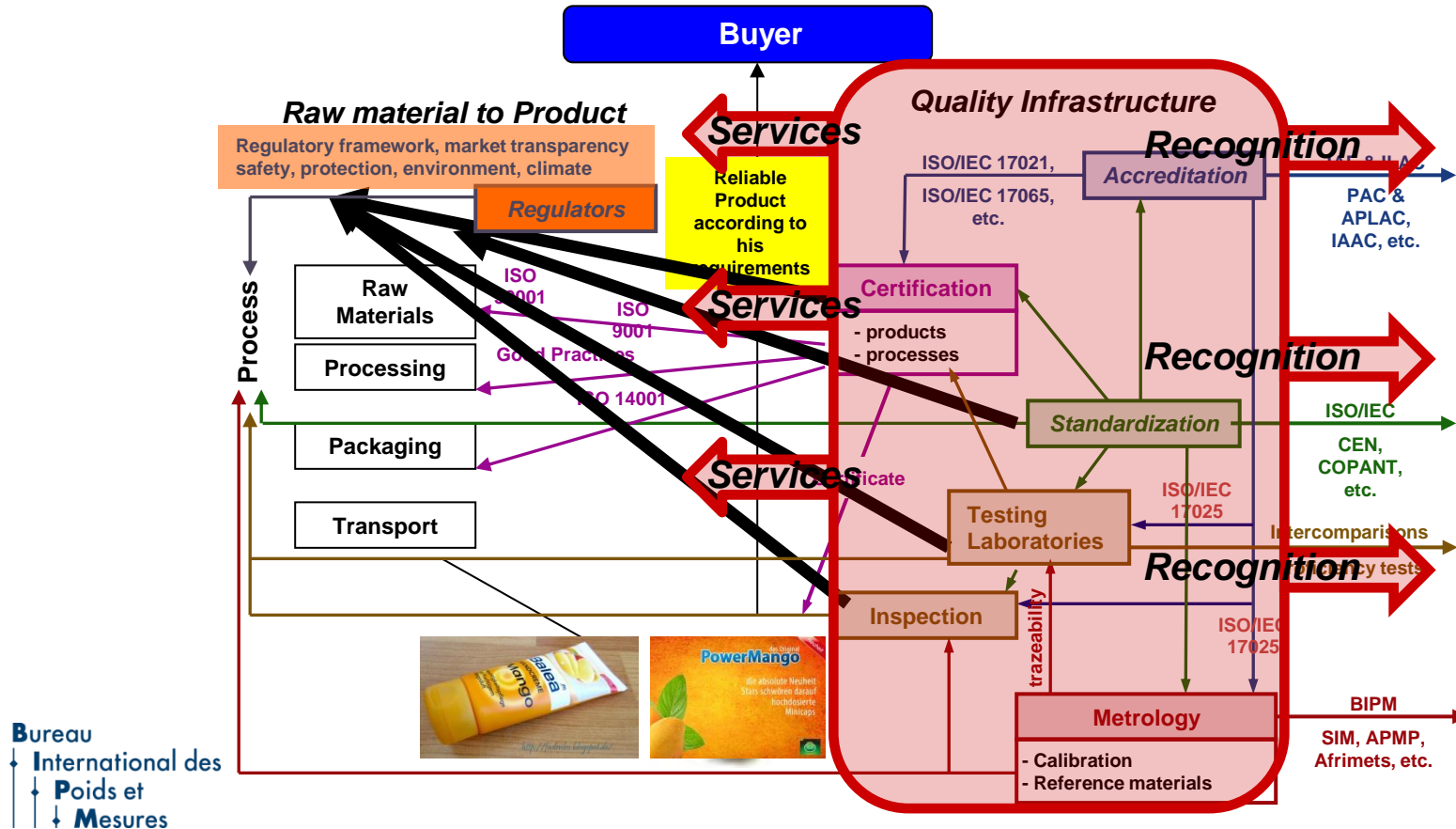
Key strategic elements:

- 1. National Metrology Policy (governance, institutional framework, funding)**
- 2. NMI and (potential) Designate Institutes (DI)**
- 3. Regional and international relations (positioning of the NMI)**
- 4. Institution building of NMI**
- 5. Technical competence of NMI**
- 6. NMI and secondary laboratories (Calibration & MiC)**
- 7. NMI and Regulators (Metrology in regulated area)**
- 8. NMI and QI components (Standards Body, Accreditation Body, etc)**
- 9. NMI and Industry**
- 10. Metrology Culture (Education, Marketing)**

QI support to Protection & Quality Improvement



National Quality Infrastructure & Value Chains



The state has three key functions in the development of the National Quality Infrastructure:

1. Regulator

The competent authorities (ministries) have the mandate to

- **regulate for national protection purposes (consumers, environment, safety, trade, taxation, etc.)**
- **enforce compliance in the entire territory through border controls, market surveillance, etc.).**

The QI services should provide the competent technical support!

The state has three key functions in the development of the National Quality Infrastructure:

2. Buyer

The public sector is usually the biggest buyer in an economy.

Through the procurement policy (requirements in public tenders) the state can create immense demand for quality and performance higher and more challenging than in regulations.

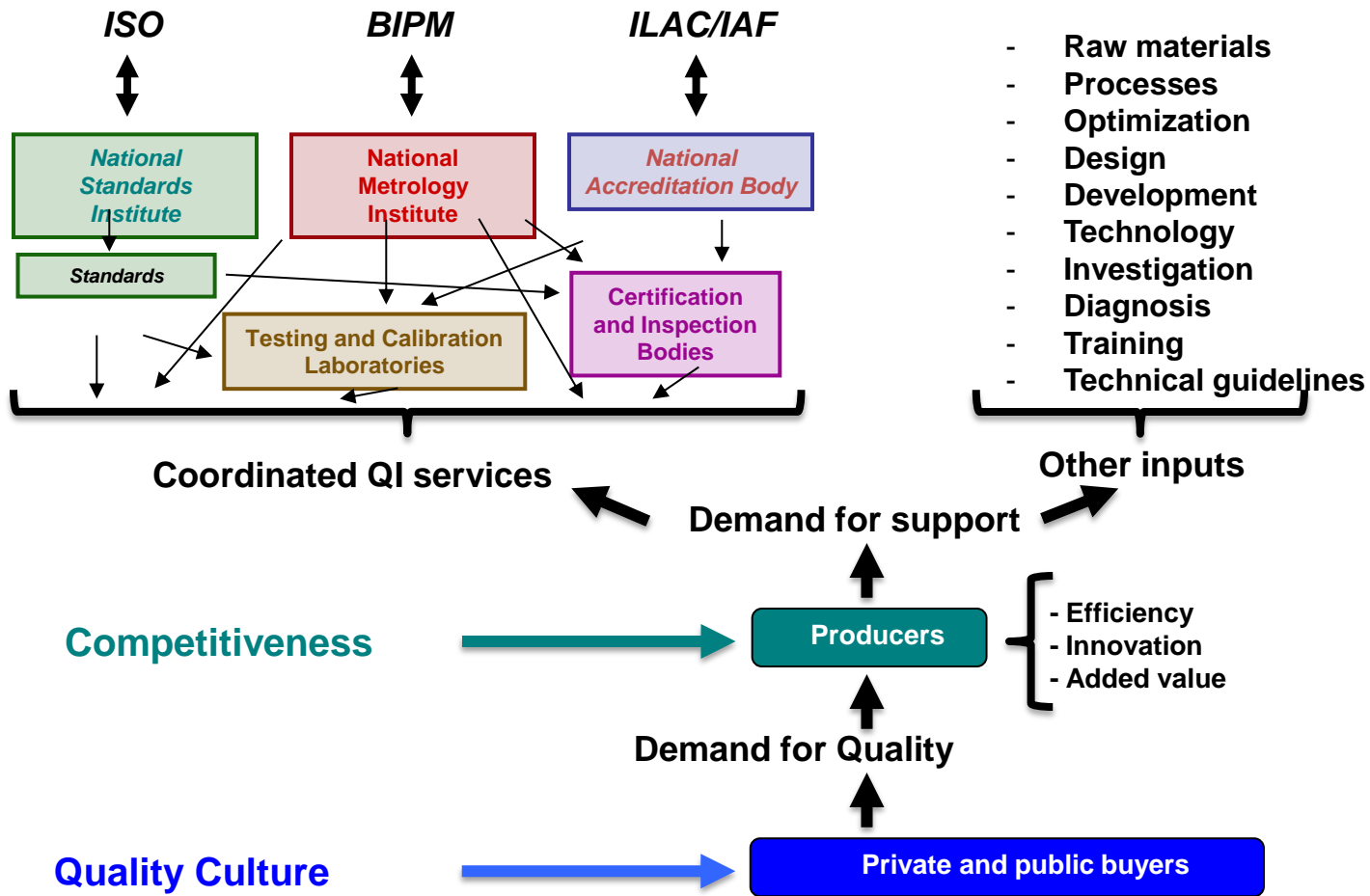
This stimulates additional NQI service offers!

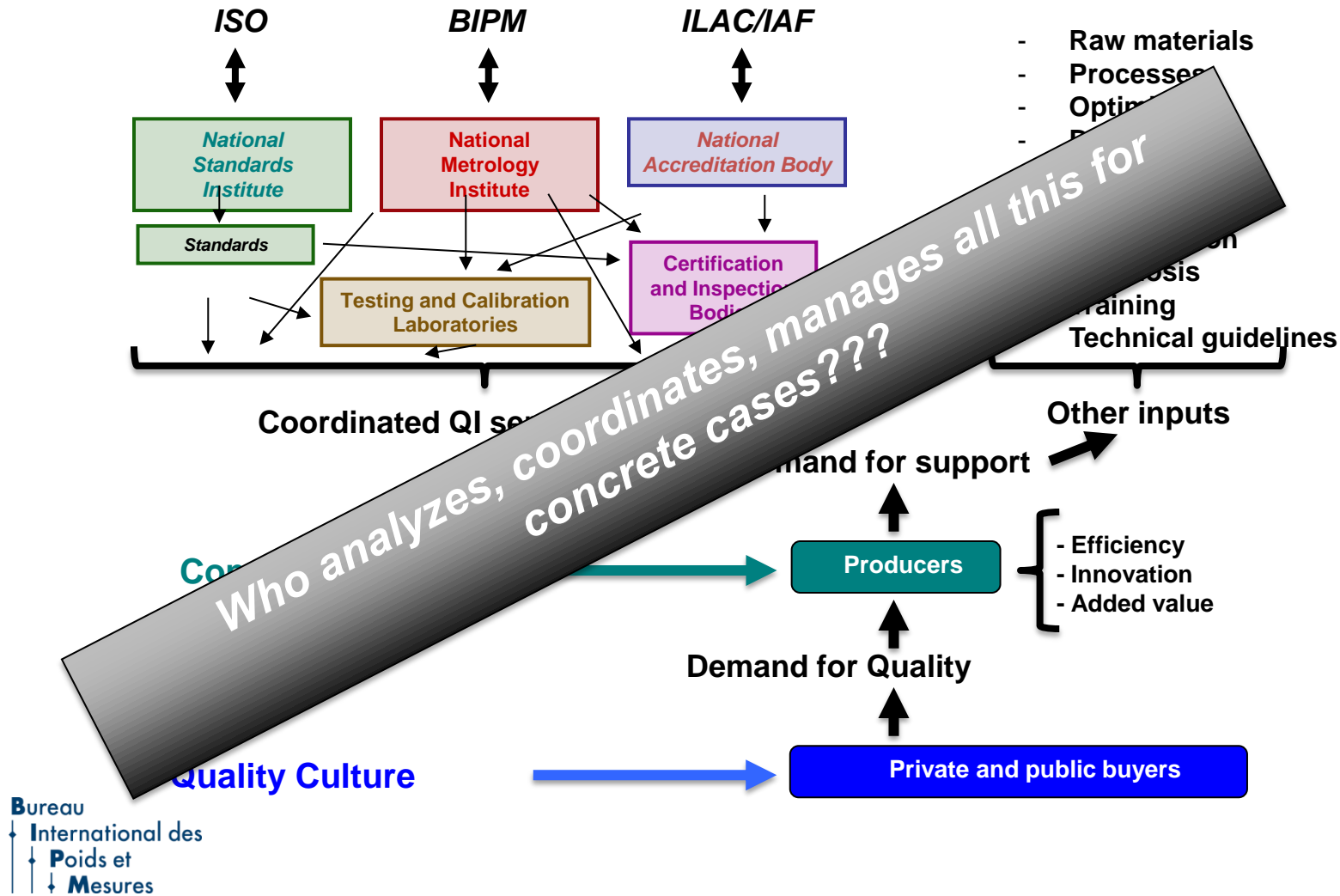
The state has three key functions in the development of the National Quality Infrastructure:

3. Policy maker

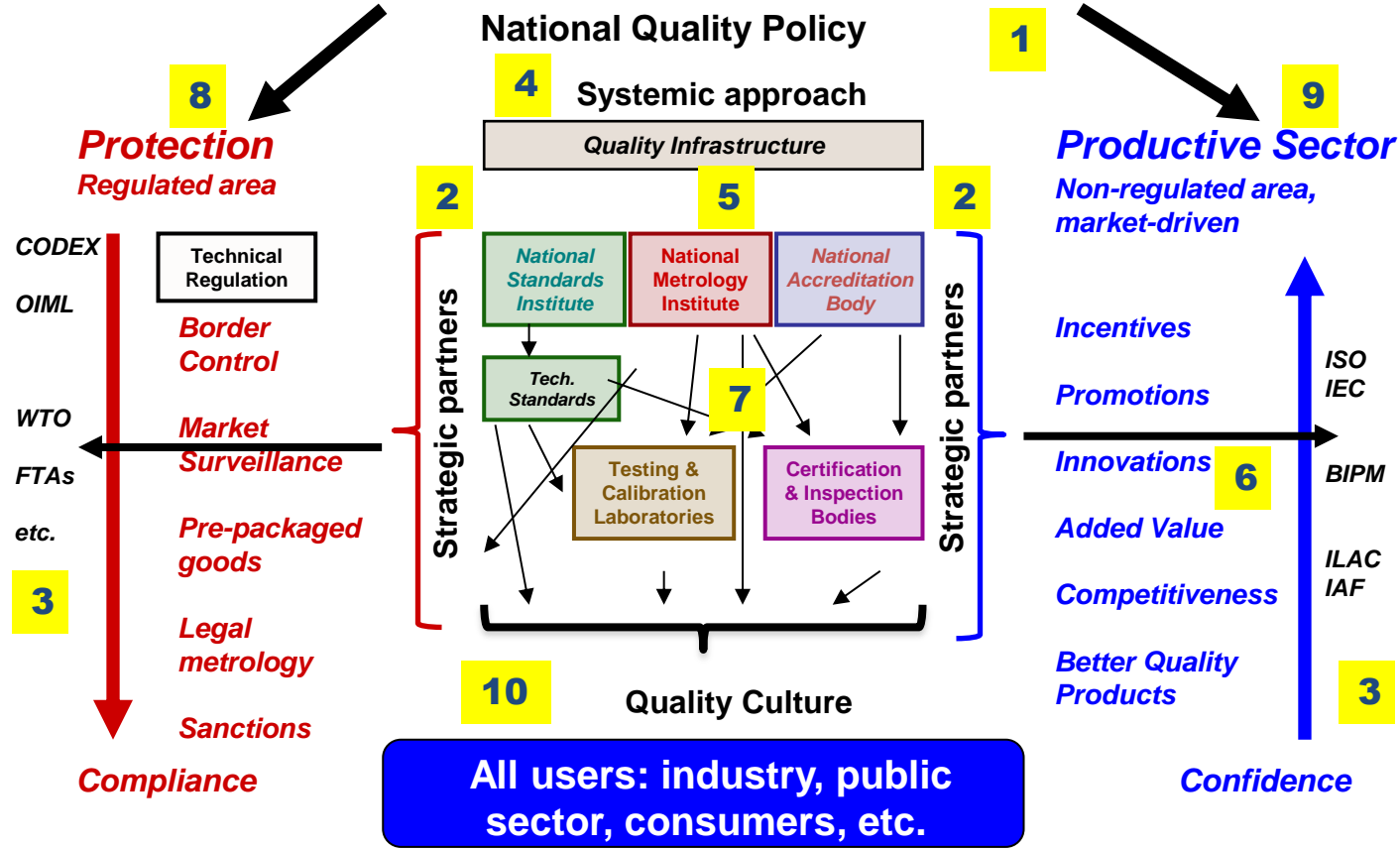
The role of the government is to steer the process:

- A high impact is guaranteed through the promotion of a „**Quality Culture**“, education of consumers, strengthening of consumer rights and transparency in the market. The more demanding consumers, the more the productive sector has to respond and creates demand for NQI services.
- If the development of the NQI is not enough stimulated by the industry and the markets (like in developed high-tech economies) an appropriate **quality policy** would be helpful.
- Considering the high creative potential of the market forces the private, public, academic and consumer stakeholders should be actively integrated in the quality policy, strategy and implementing process. A respected impartial leadership and a broad ownership represented by **all relevant stakeholders** assures the implementation success of a National Quality Infrastructure that is not only competent but flexible and highly dynamic. It provides not only reliable QI services, but also support to industries in solving problems, product development and innovation, production process efficiency, reduction of production losses, etc.





National Development Policy





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