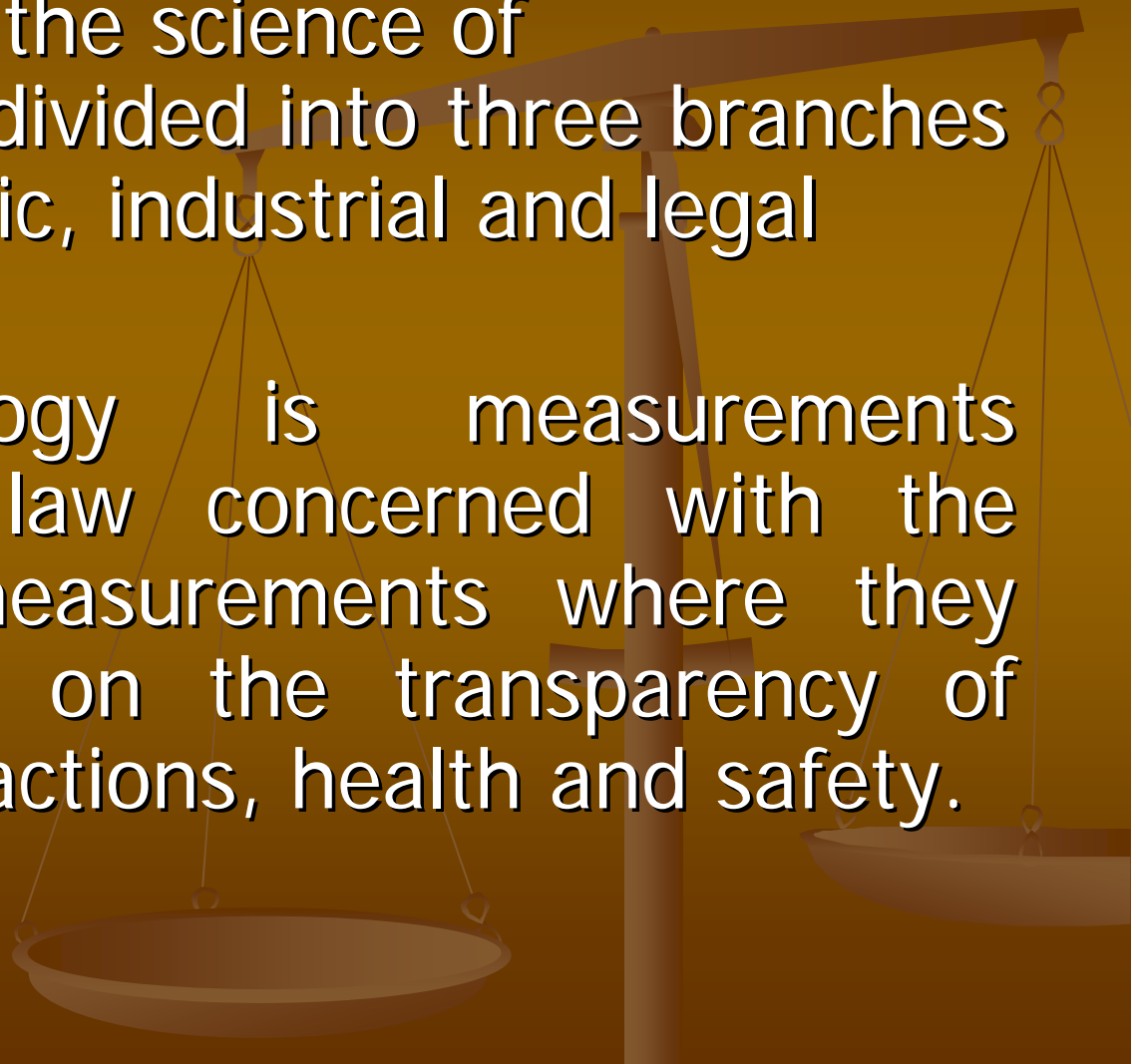


IMPORTANCE OF LEGAL METROLOGY IN COMMERCE

**Presented by John- Paul Musimami
Manager Legal Metrology Dept
UNBS**

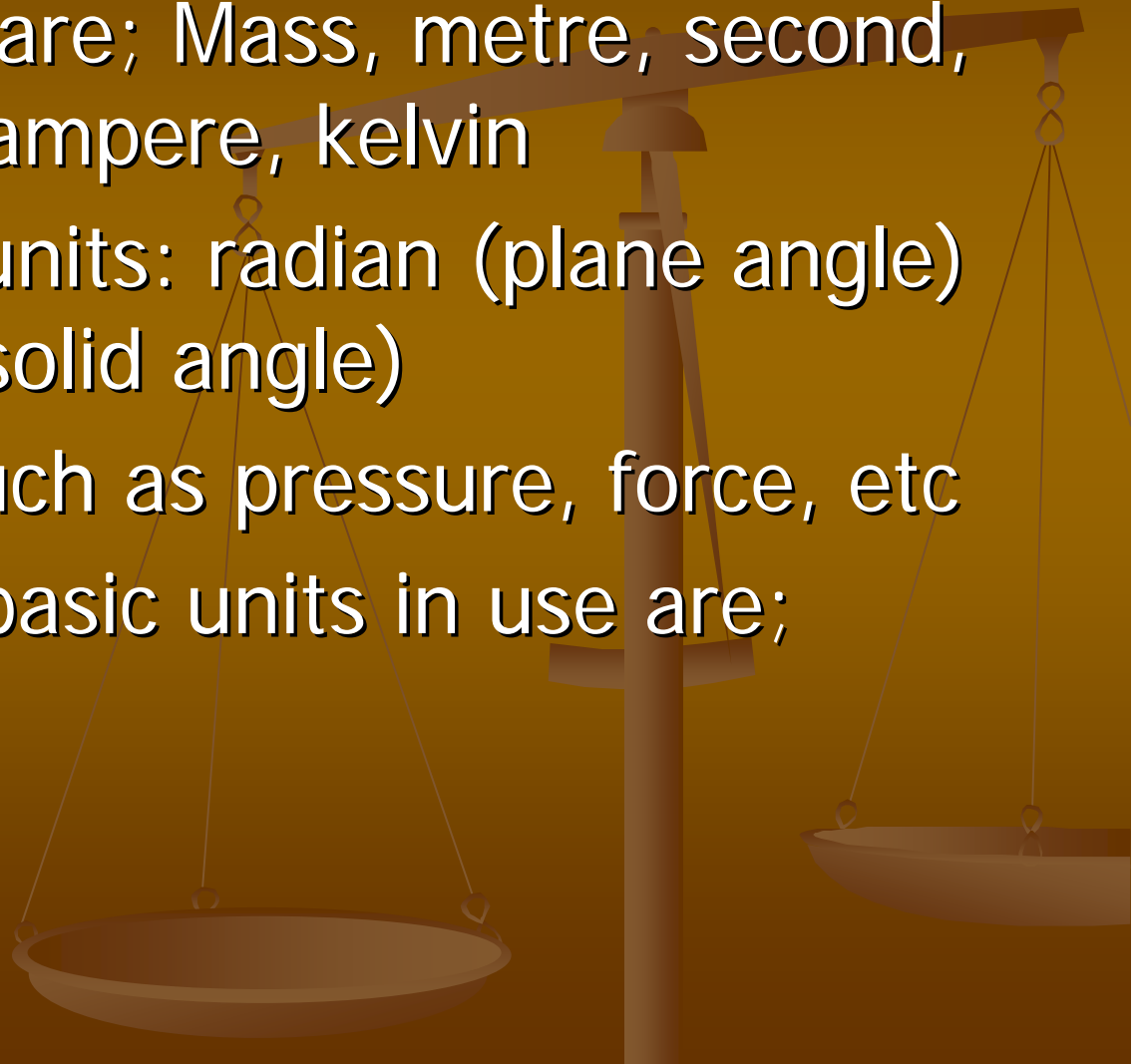
Definitions

- Metrology: It is the science of measurements divided into three branches namely: scientific, industrial and legal Metrology.
- Legal Metrology is measurements controlled by law concerned with the accuracy of measurements where they have influence on the transparency of economic transactions, health and safety.



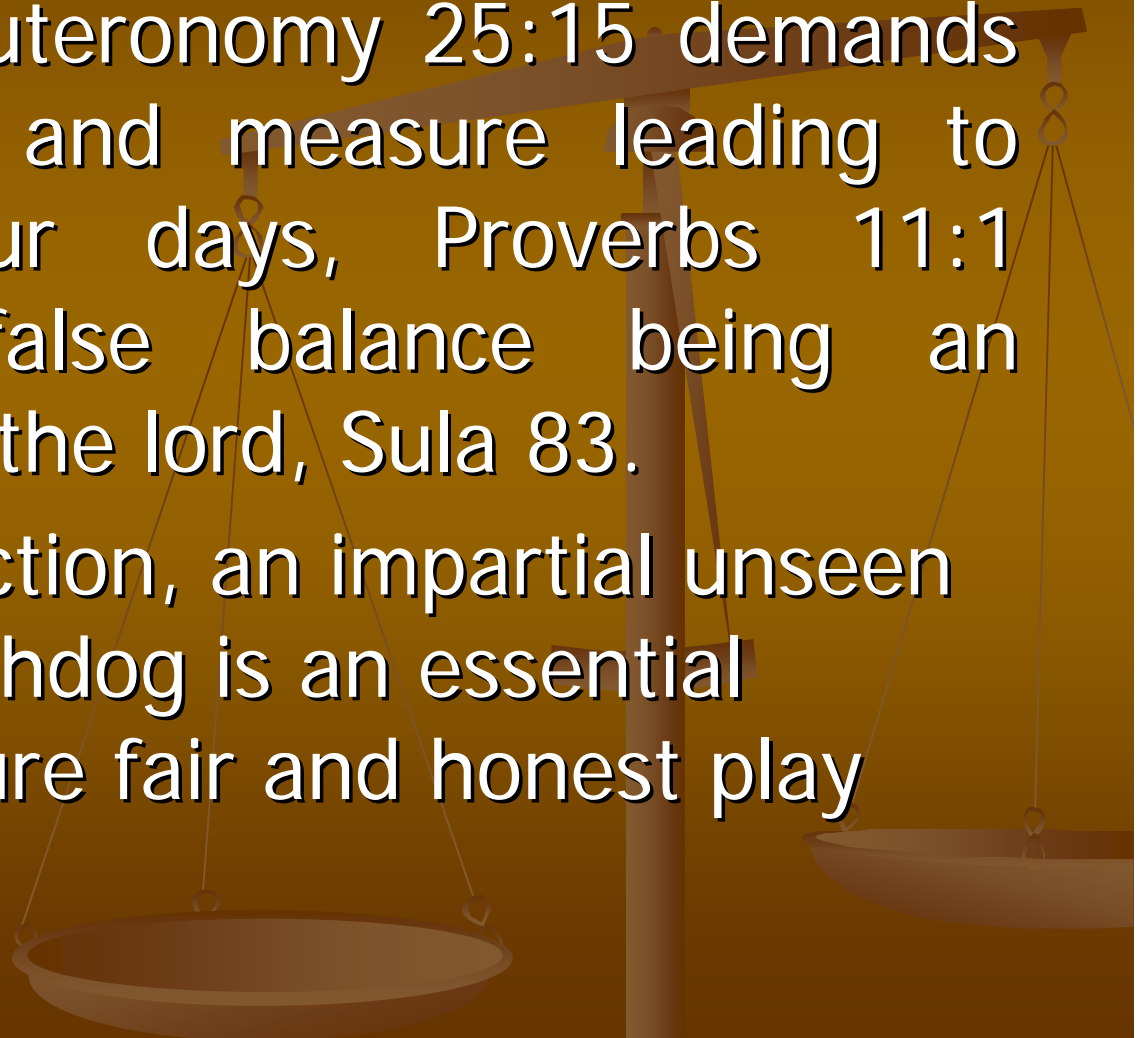
Basic units

- The basic units are; Mass, metre, second, mole, candela, ampere, kelvin
- Supplementary units: radian (plane angle) and steradian (solid angle)
- Derived units such as pressure, force, etc
- In Uganda the basic units in use are; mass, metre



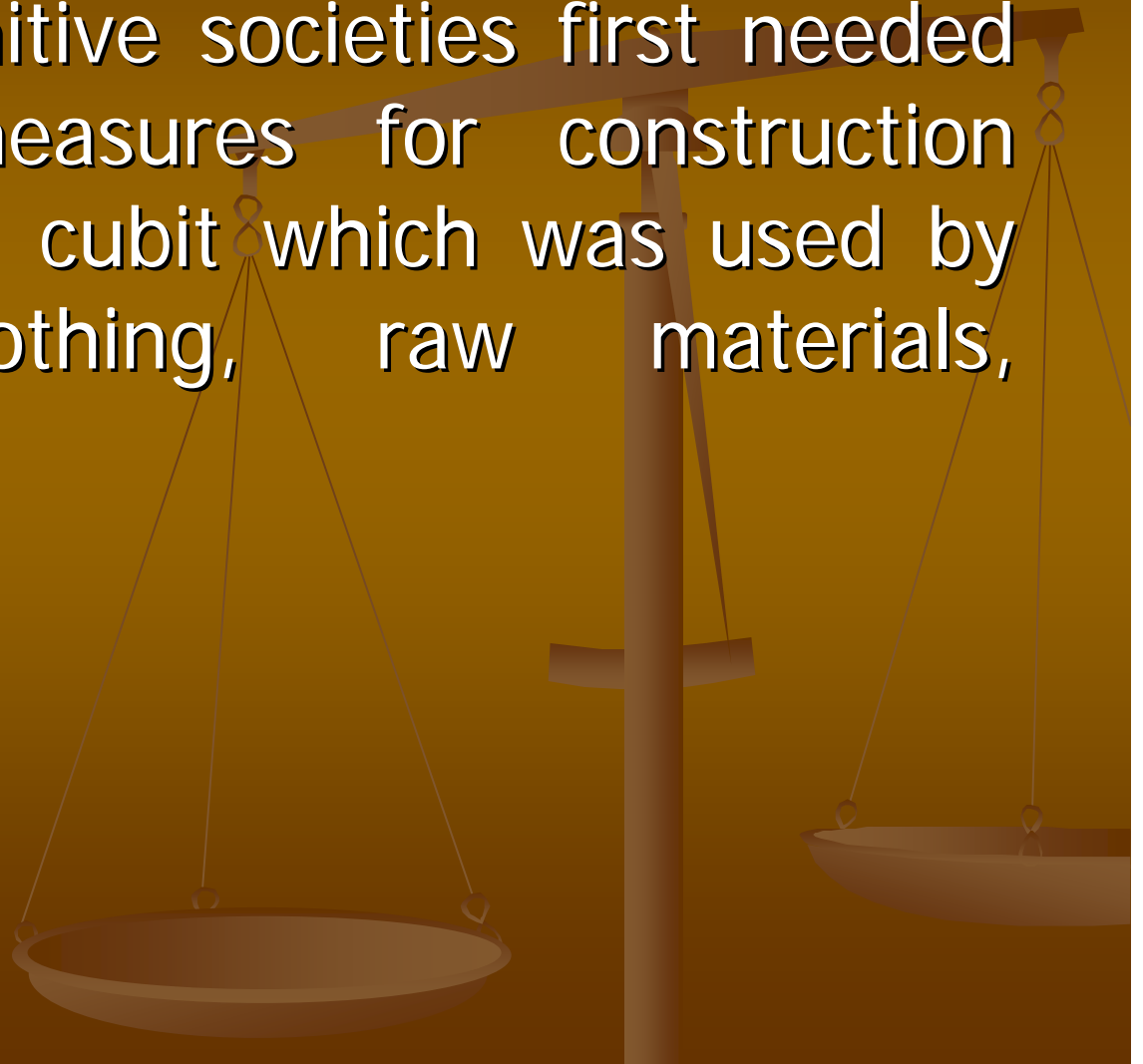
Need for Weights and Measures

- Historically, Deuteronomy 25:15 demands a just weight and measure leading to length of your days, Proverbs 11:1 mentions a false balance being an abomination to the lord, Sula 83.
- In every transaction, an impartial unseen third party watchdog is an essential element to ensure fair and honest play



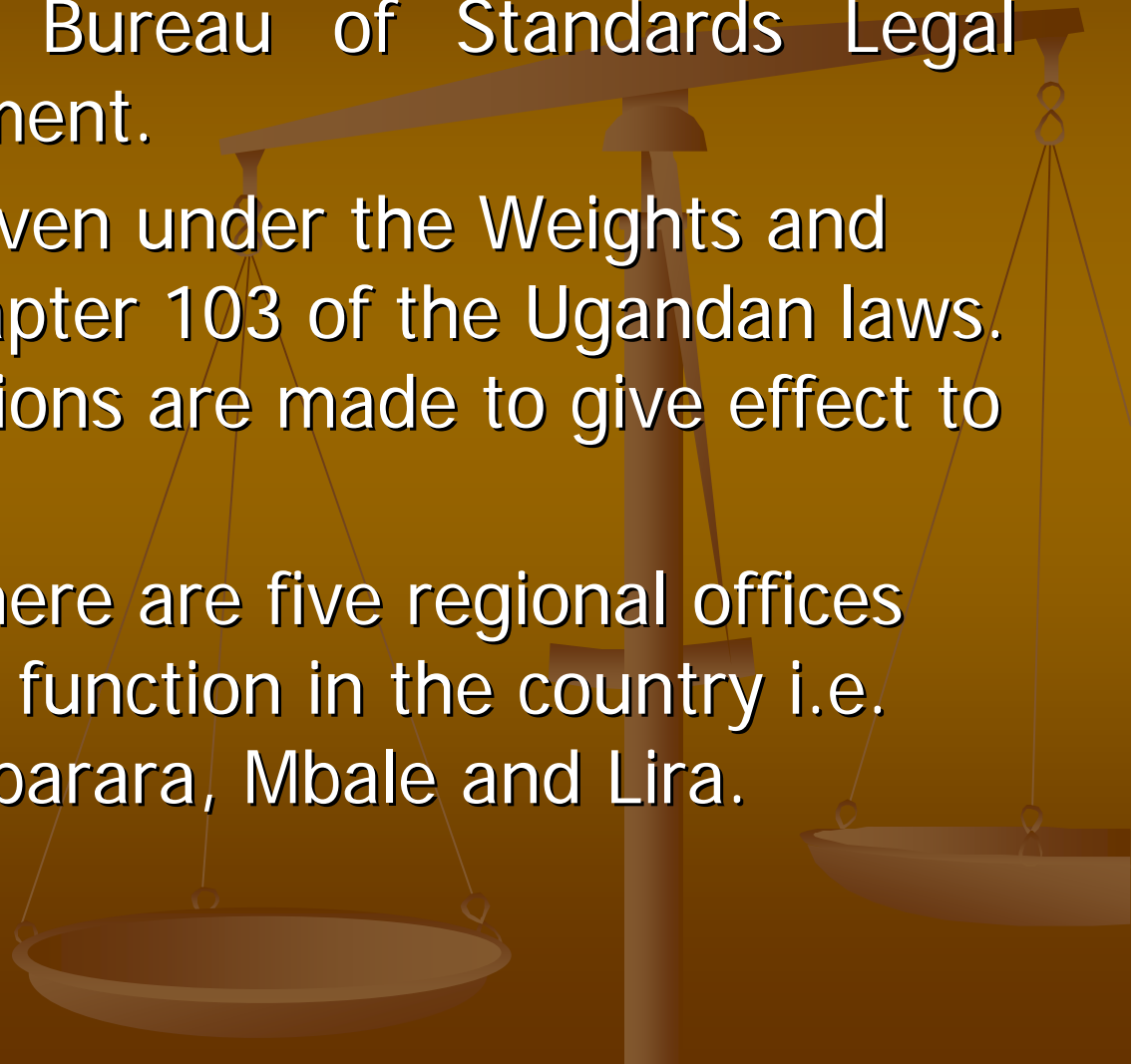
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- Ever since primitive societies first needed rudimentary measures for construction (rulers foot the cubit which was used by Egyptian), clothing, raw materials, bartering food,



Who is responsible in Uganda?

- Uganda National Bureau of Standards Legal Metrology department.
- The mandate is given under the Weights and Measures Law chapter 103 of the Ugandan laws. Subsidiary legislations are made to give effect to the law.
- At the moment, there are five regional offices taking care of this function in the country i.e. Kampala, Jinja, Mbarara, Mbale and Lira.



How is it executed?

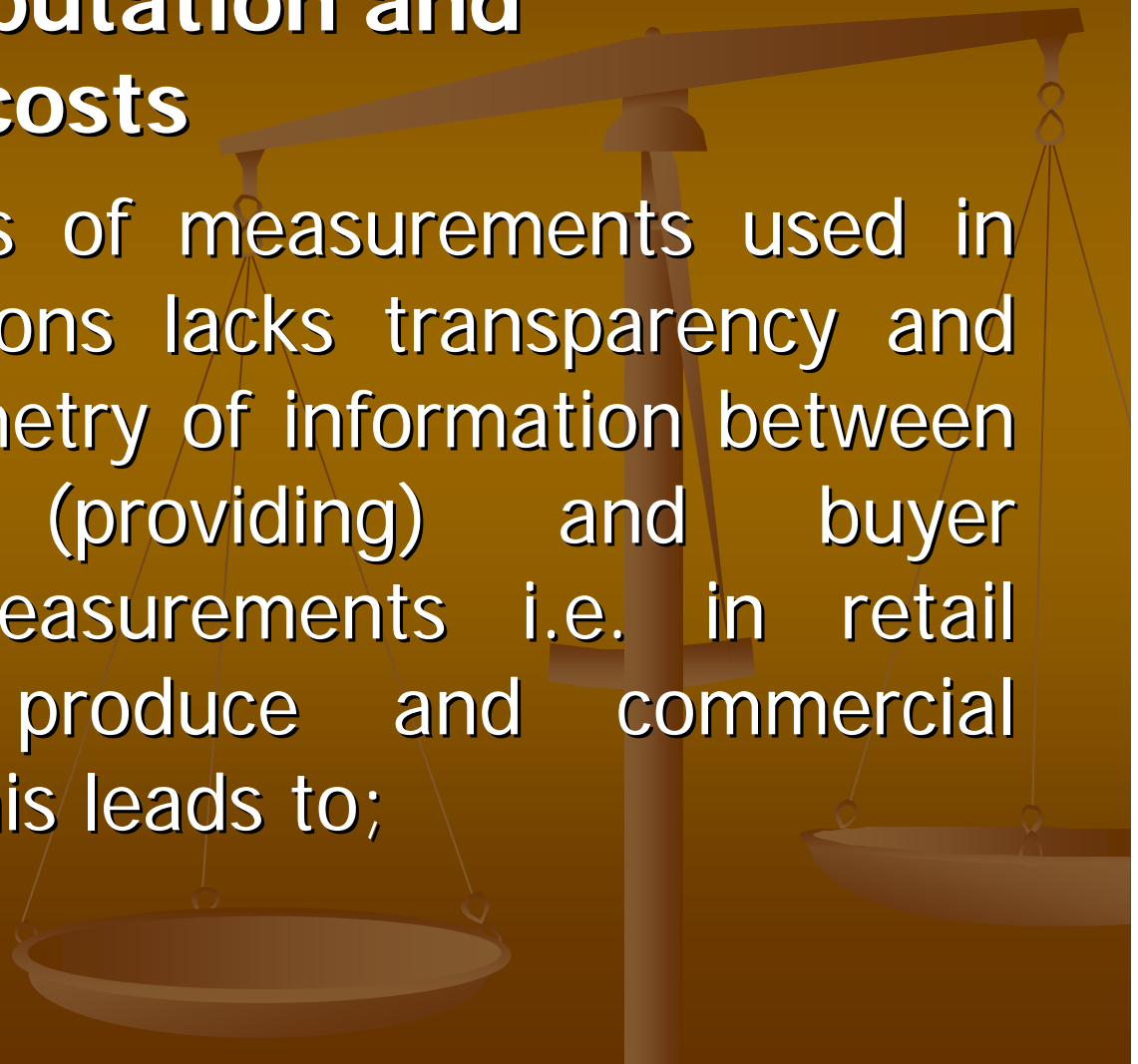
- The metrological control is done by the Weights and Measures inspectors whose duties are: pattern approval, verifications, inspections, investigations, prosecutions, prepackage control
- The activities currently undertaken include; verification of weights, weighing scales, fuel pumps, road tankers, length measures, capacity measures, bulk measures, pressure gauges

Benefits derived from the above activities

1. Reduced disputation and transaction costs

When a process of measurements used in trade transactions lacks transparency and there is asymmetry of information between the trader (providing) and buyer (accepting) measurements i.e. in retail trade, farm produce and commercial transactions, this leads to;

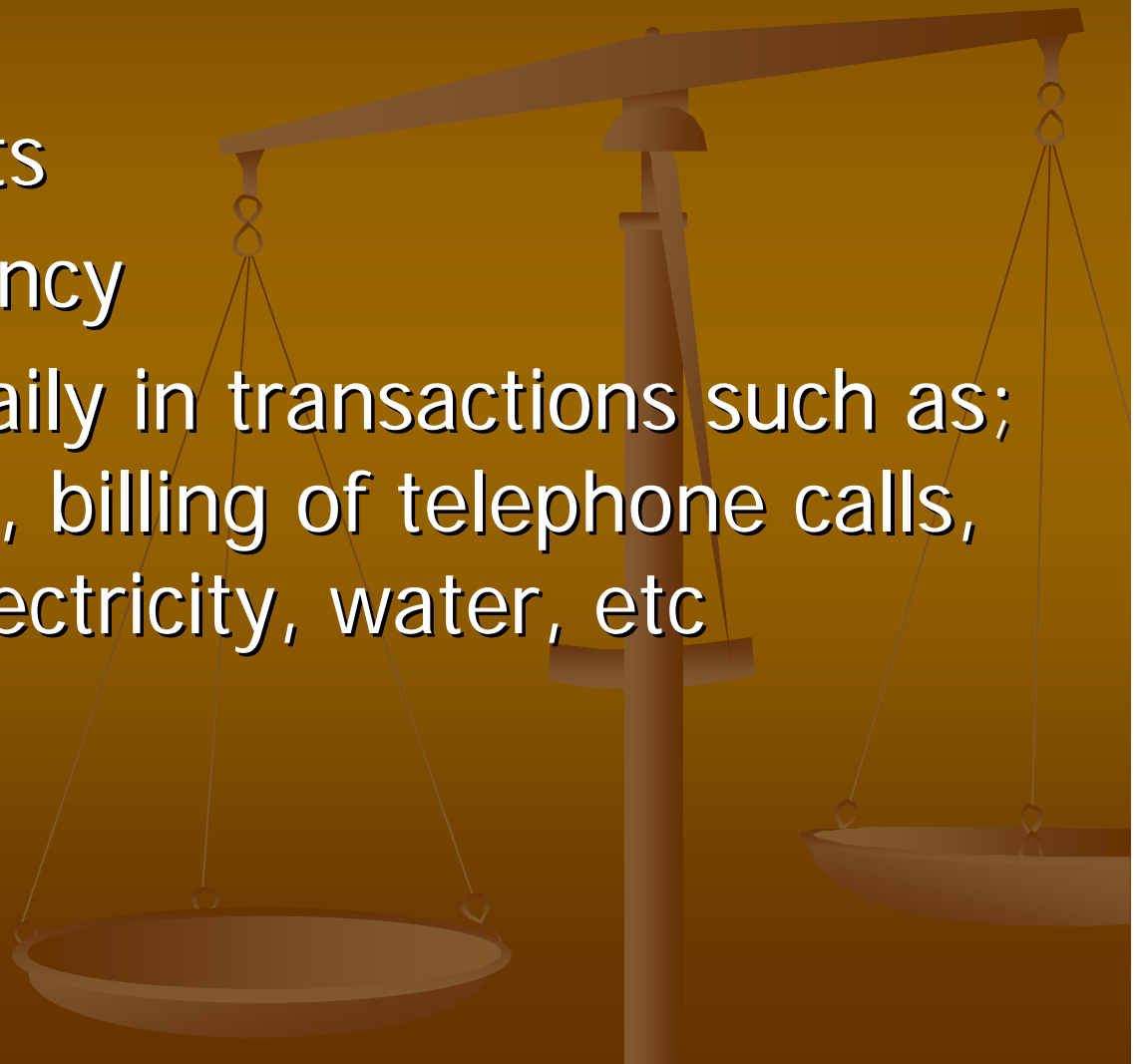
- uncertainty



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- disputation
- transaction costs
- market inefficiency

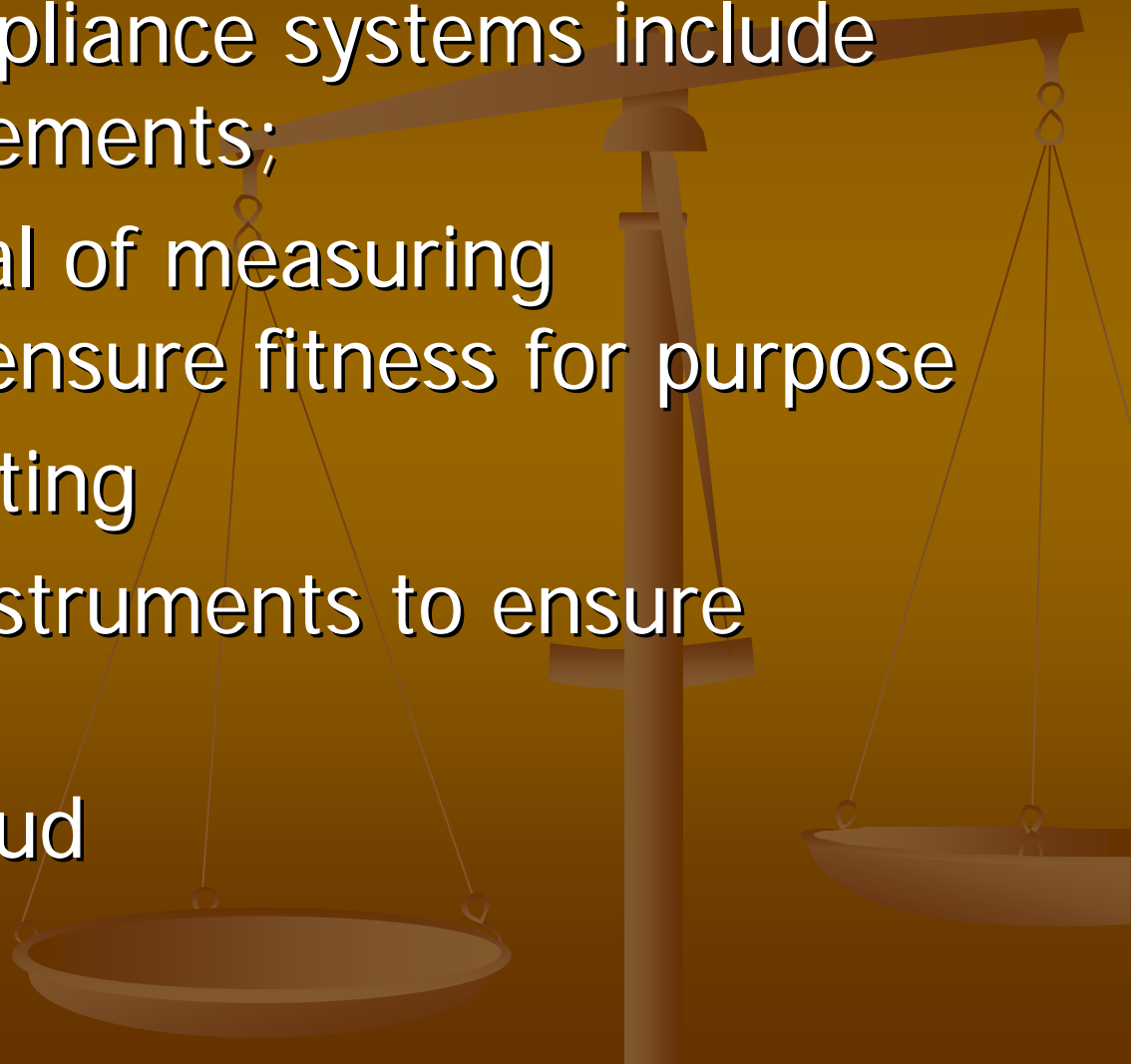
And this occurs daily in transactions such as; petroleum sales, billing of telephone calls, sale of grain, electricity, water, etc



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Metrological compliance systems include the following elements;

- pattern approval of measuring instruments to ensure fitness for purpose
- third party auditing
- inspection of instruments to ensure accuracy
- detection of fraud



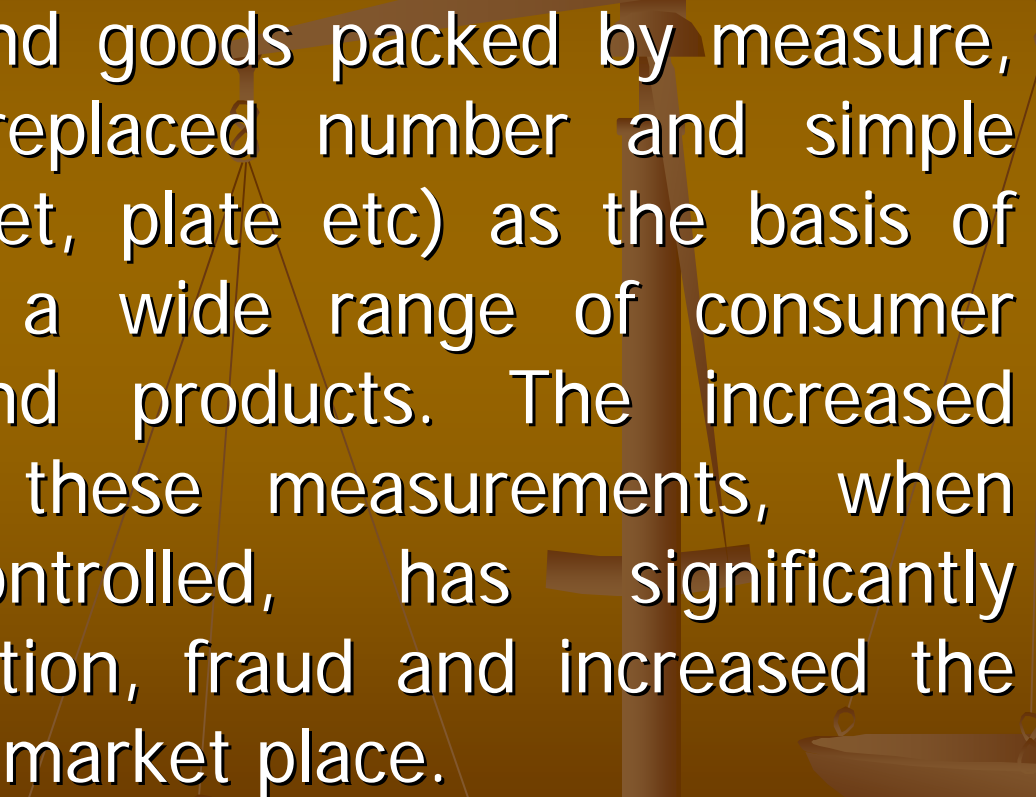
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- Research carried out in America showed that 'dollar at risk' (the sum of short and over measure) when the figures for the cost of verification and re-verification were compared, was that each dollar spent as regular periodic inspection, 19.6 dollars of non complying measurement was corrected. On average total trade measurement inequity is comprised of 35% short measure and 65% over measure

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2. **Consumer protection**

Measurement, and goods packed by measure, has generally replaced number and simple measures (bucket, plate etc) as the basis of transaction for a wide range of consumer commodities and products. The increased consistency of these measurements, when adequately controlled, has significantly reduced disputation, fraud and increased the efficiency of the market place.



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3. Level playing field for commerce

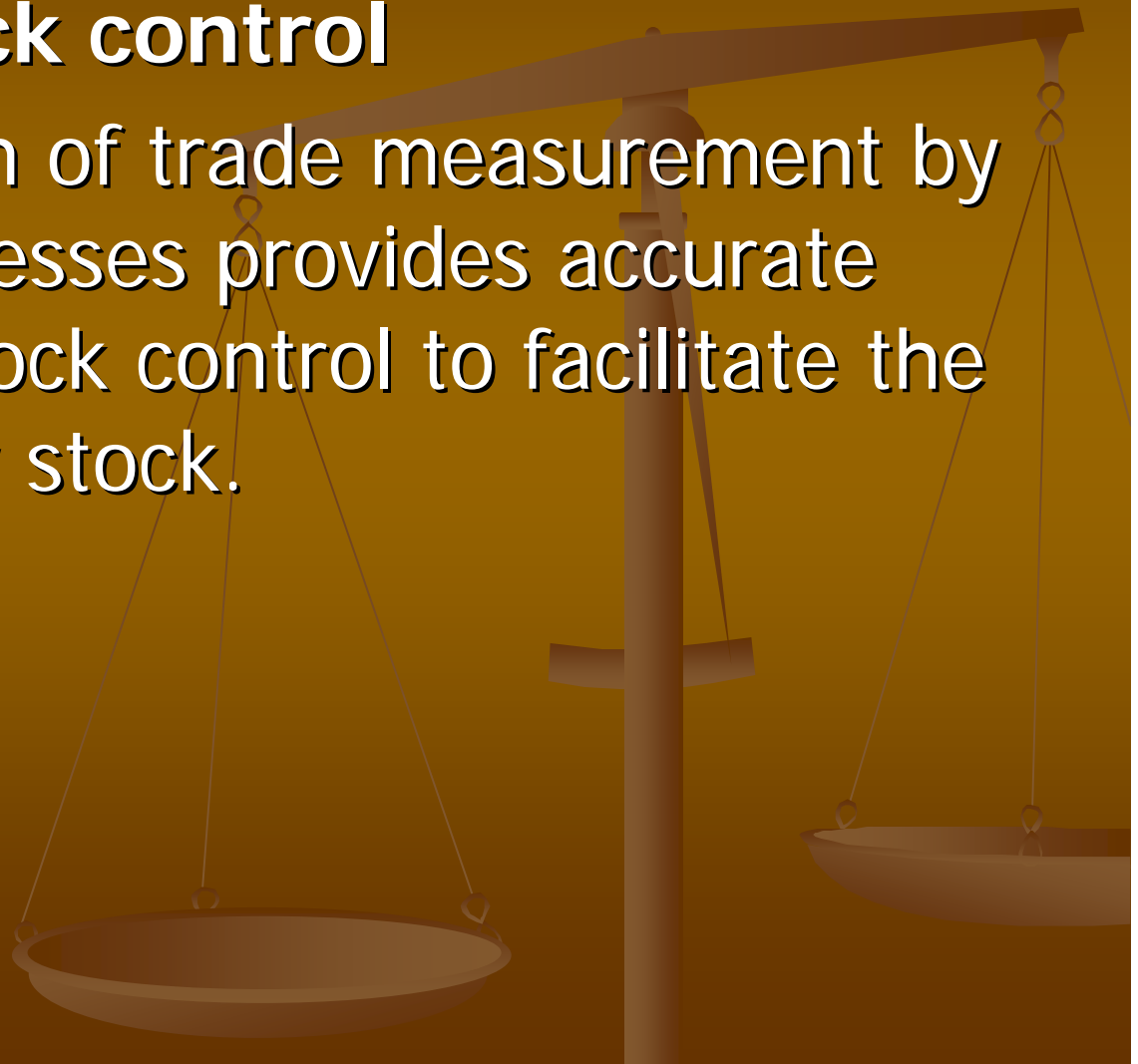
Metrological control ensures fair trading by eliminating the use of short measure to obtain commercial advantage over competitors in the marketplace thus contributing to fair trade.



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4. Effective stock control

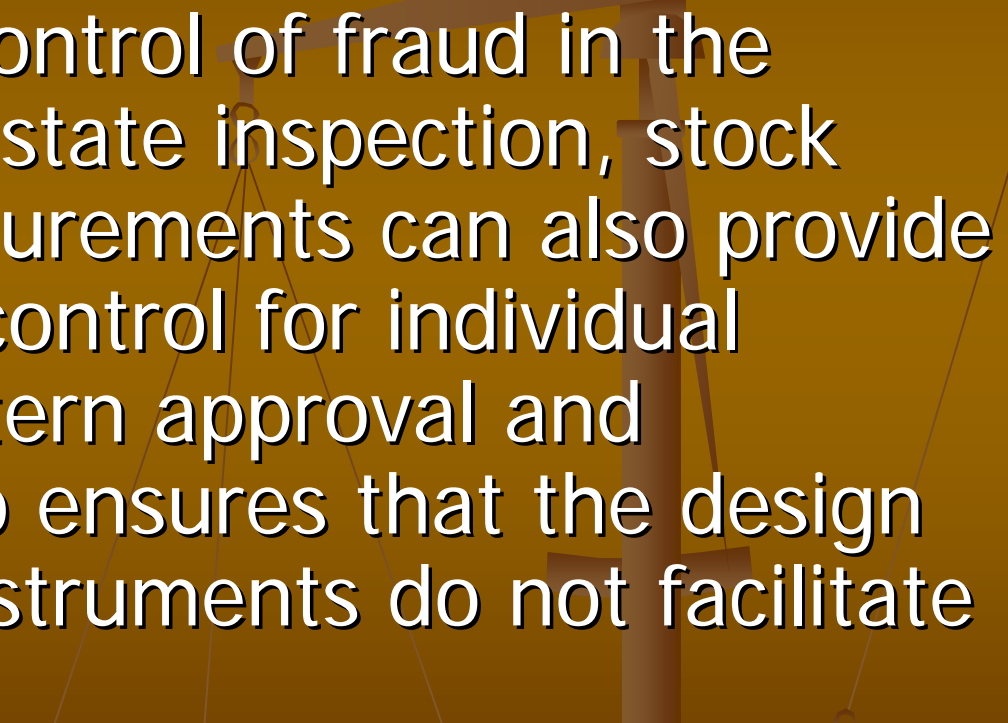
The aggregation of trade measurement by individual businesses provides accurate and effective stock control to facilitate the ordering of new stock.



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5. Control of fraud

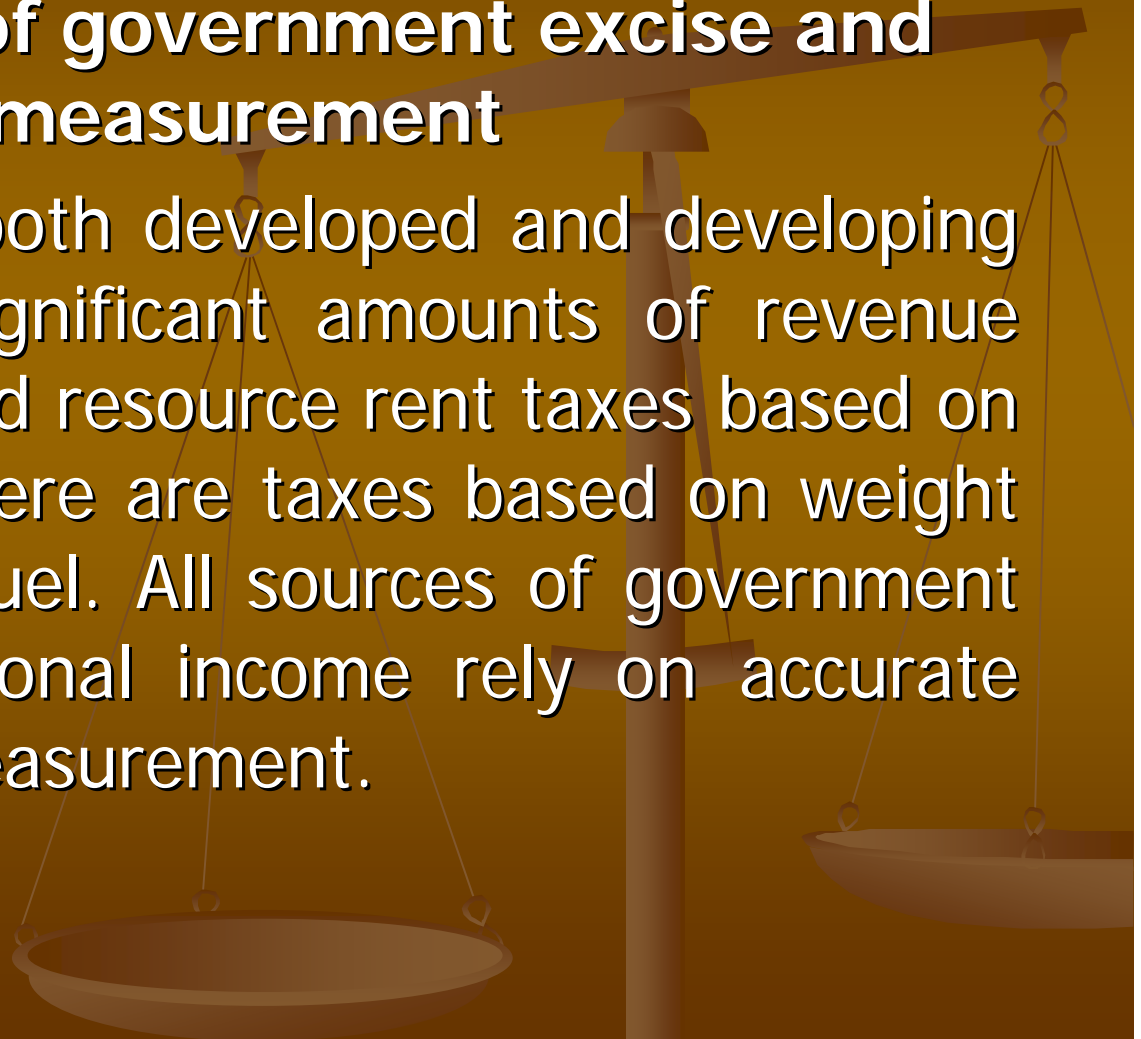
As well as the control of fraud in the marketplace by state inspection, stock control by measurements can also provide effective fraud control for individual businesses. Pattern approval and certification also ensures that the design of measuring instruments do not facilitate fraud.



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6. Full collection of government excise and taxes based on measurement

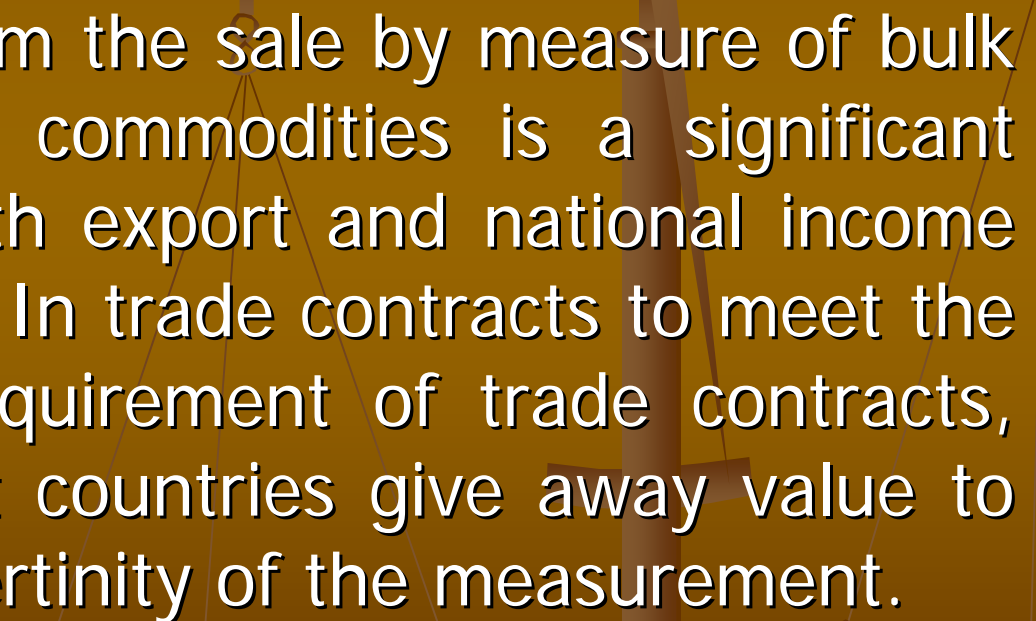
Governments of both developed and developing nations collect significant amounts of revenue through excise and resource rent taxes based on measurement. There are taxes based on weight and volume i.e. fuel. All sources of government revenue and national income rely on accurate and consistent measurement.



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7. Full national benefit for commodity exports

Export income from the sale by measure of bulk and prepackaged commodities is a significant component of both export and national income for many nations. In trade contracts to meet the short measure requirement of trade contracts, commodity export countries give away value to the extent of uncertainty of the measurement.



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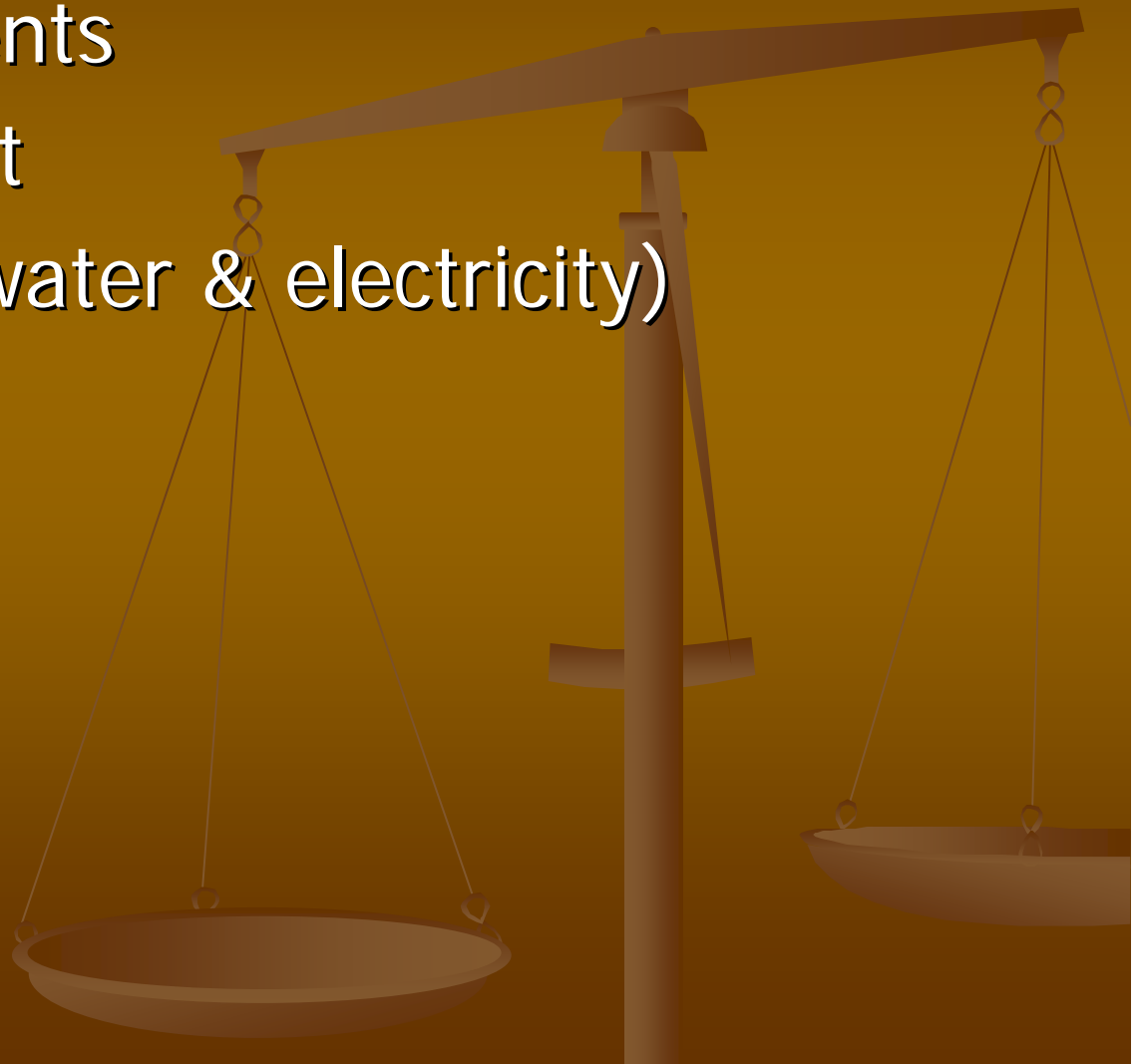
8. Support of global trade in measuring instruments

The development of International Recommendations for the Pattern approval of measuring instruments supports the global market for measuring instruments to internationally recognised standards.



New areas under consideration

- Health instruments
- Sand and ballast
- Utility meters (water & electricity)



Challenges

- Legal framework
- Under funding
- Public apathy

