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Financing of fisheries and aquaculture projects:
How to prepare a convincing feasibility study

Workshop on
Fisheries and Aquaculture in Southern Africa:
Development and Management

Windhoek, Namibia
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The setting

- Have a promising project
 - Need financing for the project
- ⇒ Need to convince potential investors
- This entails compiling a feasibility report

Note: We may or may not be convinced of the benefits of the project

How to convince potential investors?

Have to demonstrate to them that participating in the project (as lenders or partners) meets their objectives

So,

1. What are their objectives?
2. What is their world view?

Main types of investors

1. Private investors
 - Lenders (banks, funds)
 - Investors (partners)
2. Development agencies
3. The government and government agencies

Private investors

- Objectives:
 - Maximize profits (measured at market prices after tax)
 - Minimize risk
- World view:
 - Standard economic and business models
 - Distrustful of governments
 - Not interested in environmental or social aspects (as such)

Development Agencies

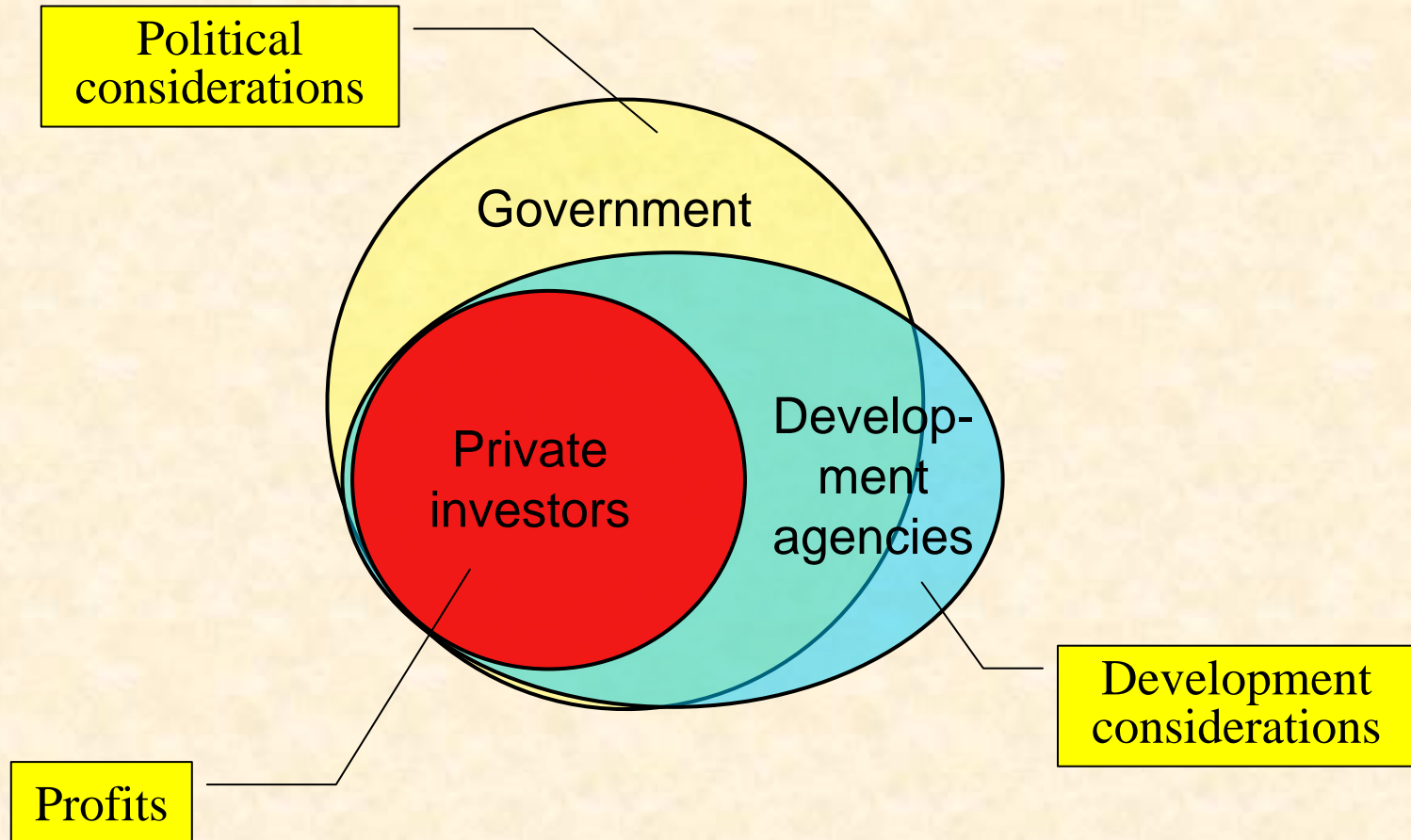
- Objectives:
 - Maximize development (GDP, profits, employment, equity, stability, environment.. etc; – social prices)
 - Minimize risk (relative to these objectives)
- World view:
 - Standard economics and sociology
 - Often environmental and equity (gender/classes) considerations
 - Skeptical of governments

Government and government agencies

- Objectives :
 - Maximize governmental/agency benefits
 - Political and personal. May include GDP, profits, employment, equity, stability, environment.. etc)
 - Minimize risk (relative to these objectives)
- World view:
 - Some economics and sociology
 - Government is good
 - Often distrustful of private enterprise
 - Some equity and environmental considerations

Note: Different government agencies (ministries)

Investors' objectives and views



Measures of a project's return

I. Expected returns*

- Time profiles
- Aggregate measures (for project as a whole)

II. Measures of risk*

- Probability distribution of outcomes

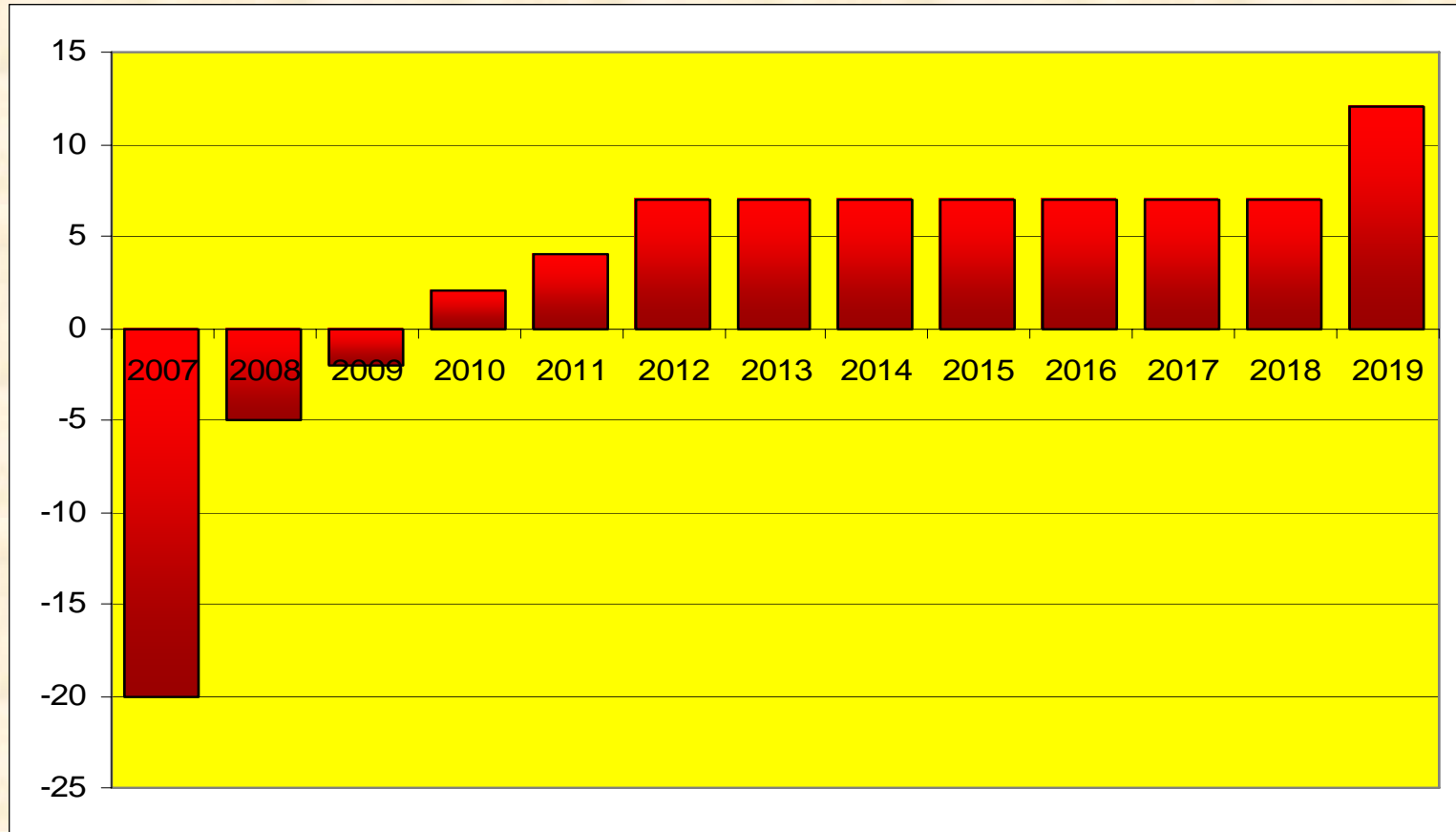
* In terms of the relevant objectives

I. Expected returns: Time profiles

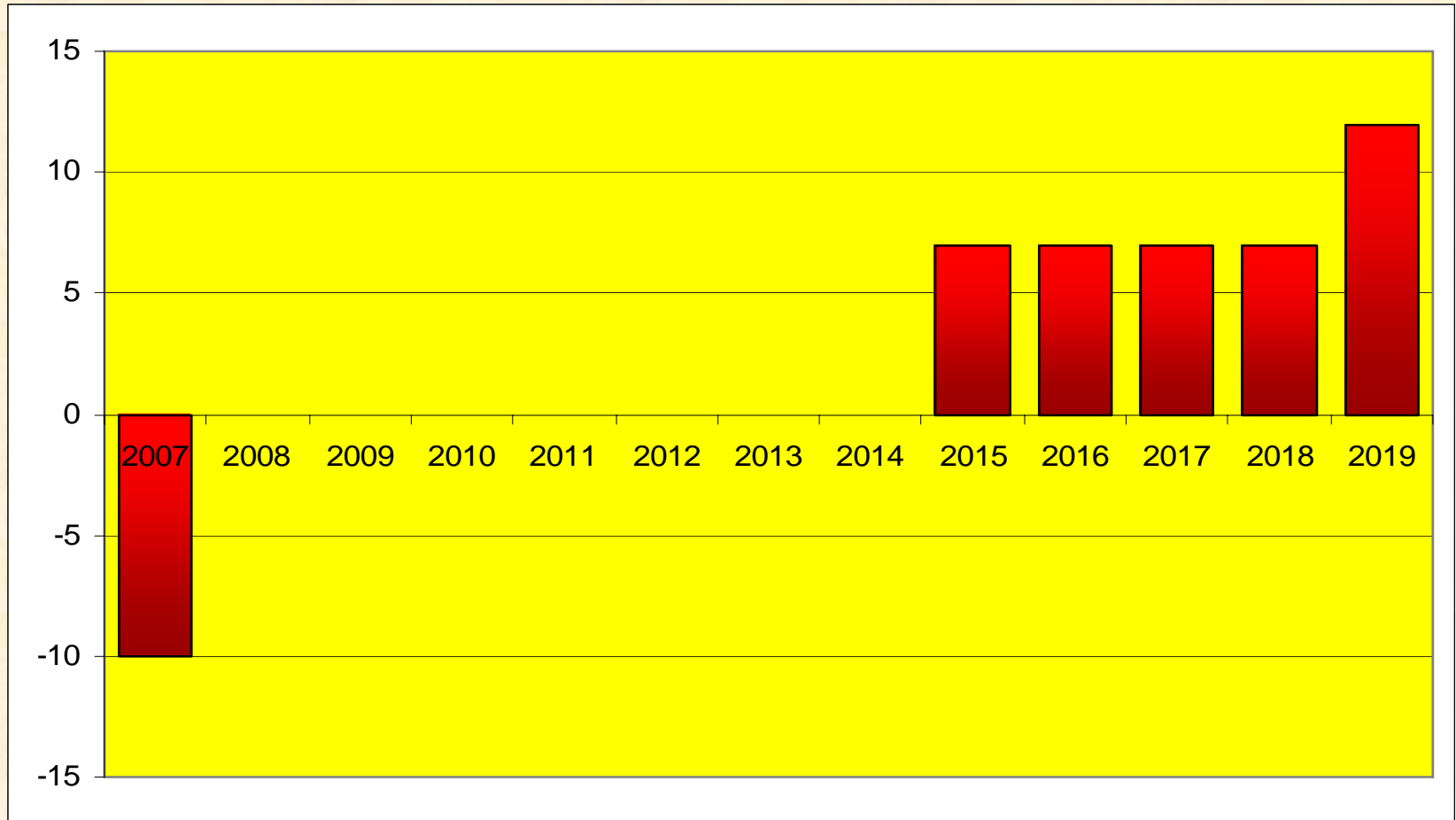
- (1) Cash flow (flow of net benefits)*
- (2) Profits and loss accounts (flows + Δ assets)*
- (3) Balance sheets (assets)*
- (4) Financial repayment scheme
- (5) Repayment schedule to (different) investors*

* Not necessarily measured in money (also environment, employment, GDP, equity etc.)

Typical Cash Flow Diagram



Typical Returns to Investors



II. Expected returns: Aggregate measures

- (1) Present value of project (unit: \$)
- (2) Internal rate of return (unit: %)
- (3) Funds recovery time (unit: years/months)
- (4) Liability elimination time (unit: years/months)

Aggregate measures: An example

A project's return: Aggregate measures

Present value (rate of discount 5%)	17.6
Internal rate of return	13%
Funds recovery time	7 years

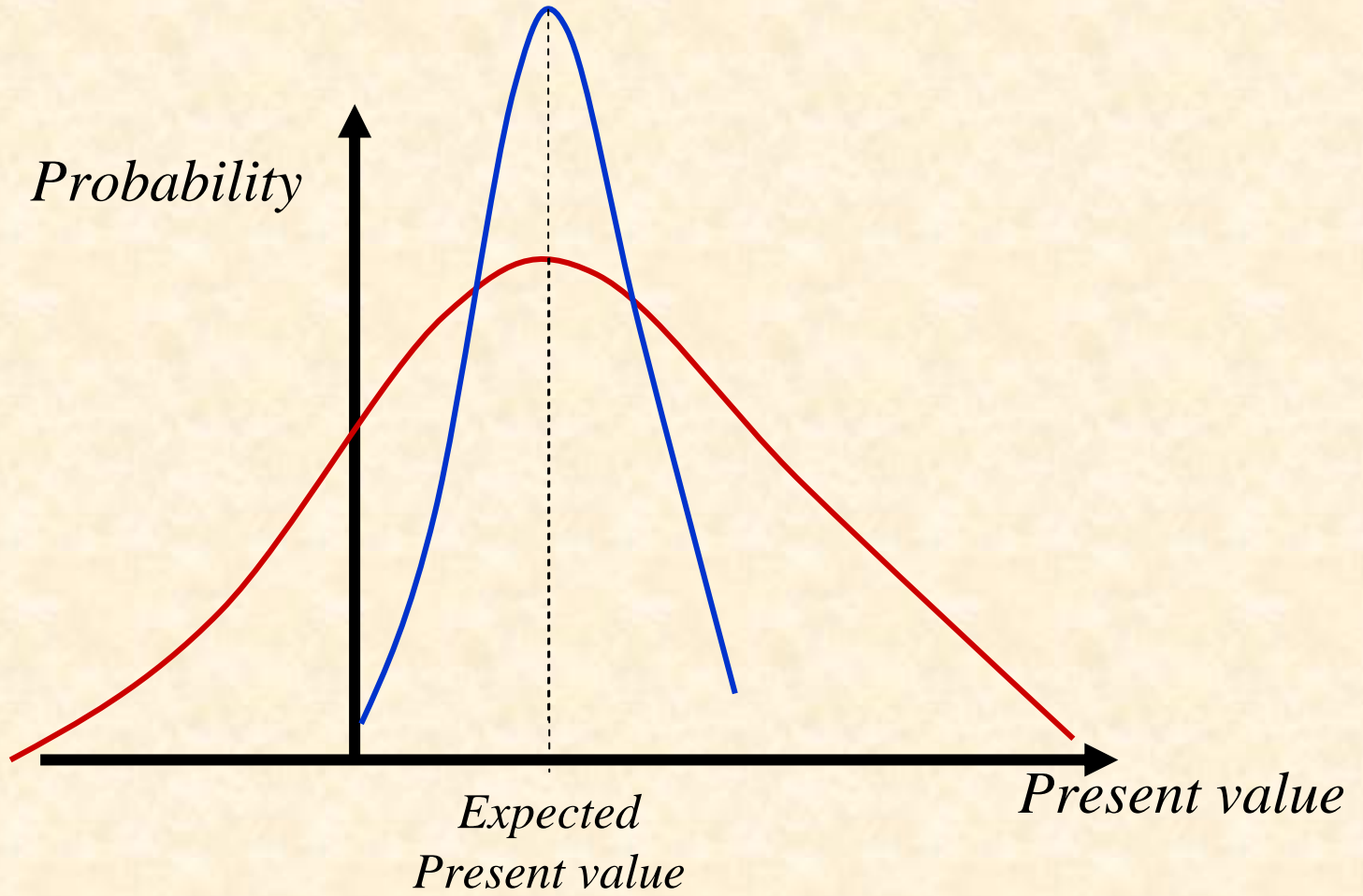
Uncertainty: Measures of risk

- All projects have uncertain outcomes

⇒ They are risky

- The only difference is the extent of risk
 - (i) Probability distribution
 - (ii) How much is at stake

Example



Representation of risk

A. Probability based

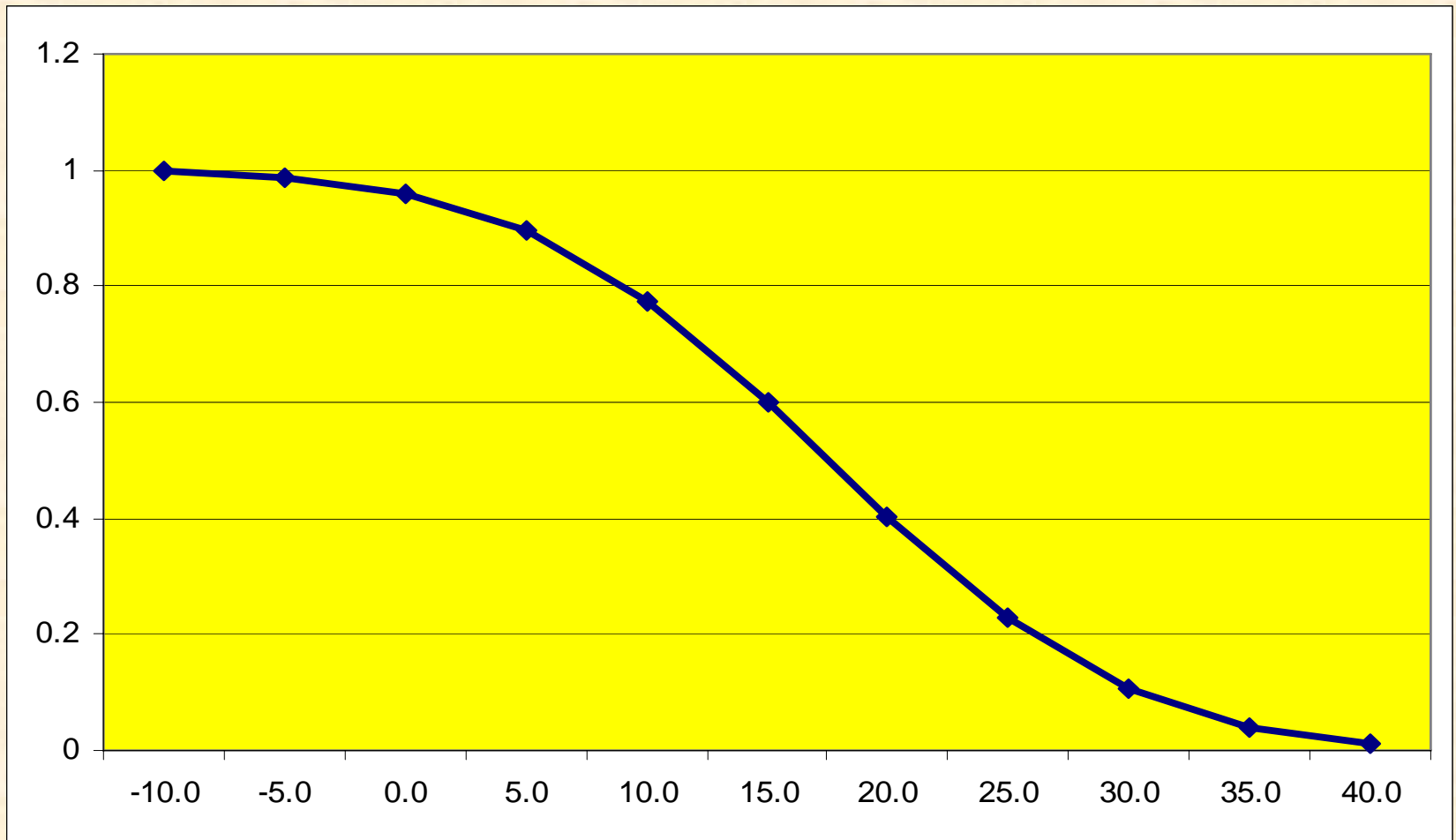
- (1) Confidence intervals (e.g. 95%)
- (2) Maximum loss with given probability (e.g. 25%)
- (3) The probability that loss (or gain) will exceed a given number

B. More simple measures

- (1) Sensitivity diagrams

Probability Graph

(probability of benefits exceeding a given amount)

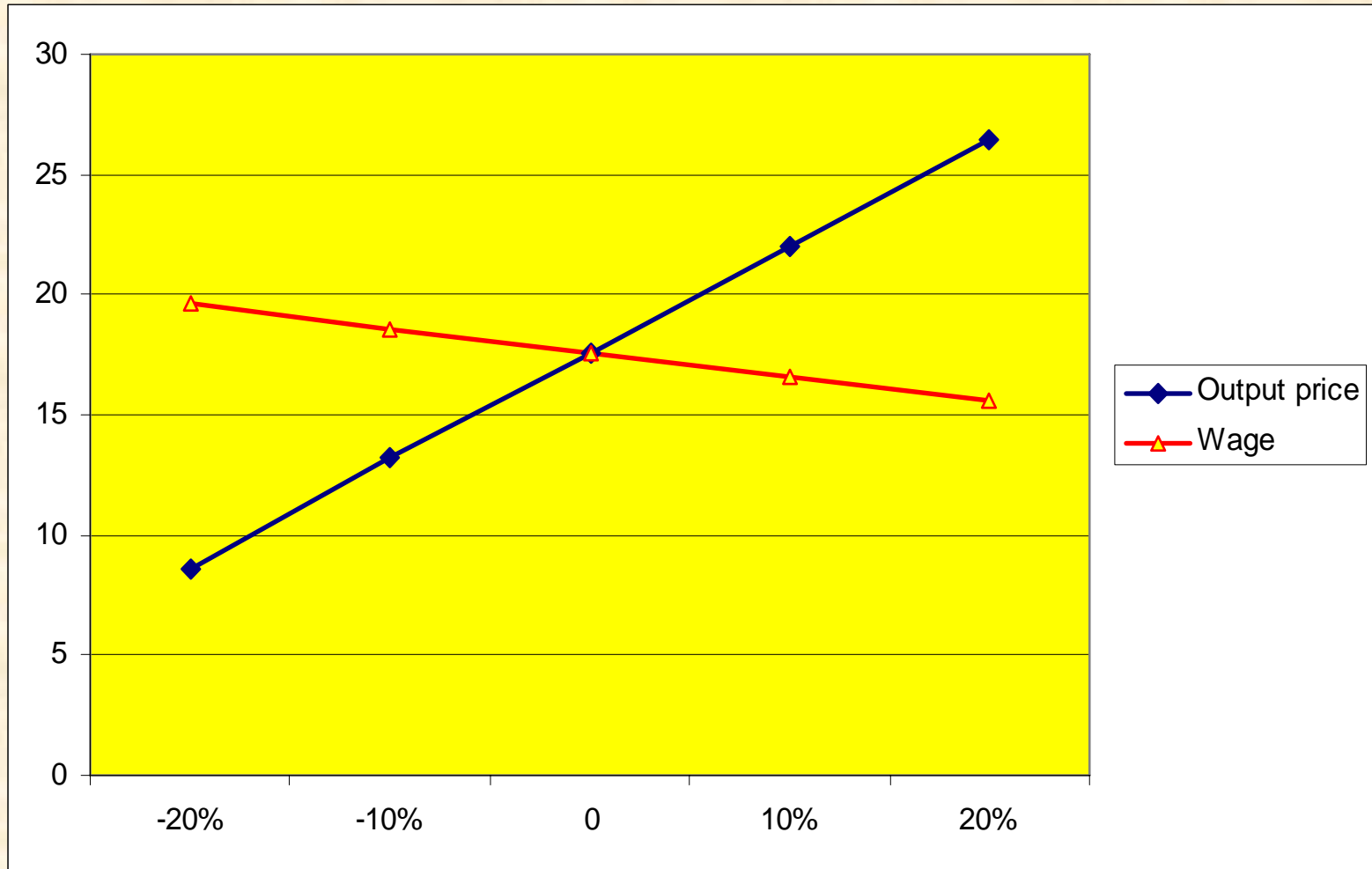


How to do this?

- Several ways
- Monte Carlo simulations
 - Simple, theoretically solid and robust
 1. Specify probability distributions for each component of the project
 2. Draw random numbers
 3. Simulate the outcome for each set of random numbers
 - Can be done in EXCEL

Sensitivity graph

(Present value for deviations in assumptions)



Feasibility Report: Basic structure

1. Executive summary
2. A summary description of project
3. Economic essentials (quantity and prices; timing)
 - Investments
 - Inputs
 - Outputs
 - Scrap value
4. Economic feasibility: Measures
5. Risk analysis
6. Overall conclusions

Confidence building

- In spite of a great feasibility study investor may still hesitate.
 - He sees things differently
 - He sees risks exogenous to the project itself
- To counter this
 - Recount experience of other investors
 - Provide data (rule of law, stability of government etc)
 - Contemplate providing guarantees

END

Market vs. Social Prices

			Market price	Social price	Market value	Social value
	Revenues					
	Output 1	10	10	11	100	110
	Output 2	5	5	5	25	25
					125	135
	Costs					
	Labour	20	5	2	100	40
	Imported inputs	5	5	4	25	20
	Other inputs	5	1	1	5	5
	Cost of output 2	5	0	4	0	20
				Total	130	85
				Profits	-5	50