Climate change and irrigation reservoirs

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Climate changes and irrigation reservoirs

- The topic under discussion is as current and relevant as it is belated.

- There has passed a long time since Europe and other advanced nations have changed the technical conditions with the view to increasing safety by adopting the series of measures:
  - Data that are added up in the period of the reservoir exploitation
  - Trends of climatic changes (currently evident)

- Unfortunately we still have in effect designing criteria that pertain to the latter part of the ’80s.

- It’s about time such actions were taken in Albania before it’s too late.
CLIMATIC CHANGES AND IRRIGATION RESERVOIRS

- MAIN PURPOSE OF THE IRRIGATION RESERVOIRS

  COLLECTION OF A CERTAIN AMOUNT OF WATER AT THE TIME OF RAINFALLS TO USE THEM DURING THE DROUGHT PERIOD.

- IN THIS CONTEXT THE RESERVOIRS ARE BUILT IN AREAS WITH WATER RUNNING DOWN:

  ALL YEAR ROUND (RIVERS AND BROOKS)

  IN RAINFALL SEASON (VALLEYS)

- THE DESIGNING PHASE OF RESERVOIRS GOES THROUGH TWO STAGES:

  DEFINING THE OPTIMAL PARAMETERS OF THE RESERVOIRS.

  DAM DESIGN.
CLIMATIC CHANGES AND IRRIGATION RESERVOIRS

- DAMS APART FROM POSITIVE SIDES,
  - ESTABLISHING A WATER RESERVE,

- CARRIES NEGATIVE ASPECTS:
  - IMMINENT DANGER TO FLOODING IN THE LOWER PART OF THE VALLEY

- CLIMATE HAS AN IMPACT, POSITIVE OR NEGATIVE, ON THE RESERVOIR.
  - ATMOSPHERIC (AVERAGE, MINIMAL AND MAXIMUM
  - WIND AND RIPPLES CREATED BY IT
CLIMATIC CHANGES AND IRRIGATION RESERVOIRS

- AVERAGE RAINFALLS GUARANTEE THE FILLING-UP OF RESERVOIRS

- MINIMUM AND MAXIMUM RAINFALLS EVALUATE THE FILLING UP OF RESERVOIRS (FAILURE TO FILL OR FILLING TO ITS CAPACITY)

- WIND IS A FACTOR THAT DETERMINES THE HEIGHT OF THE DAM

- THE INITIAL DATA ARE COLLECTED BY THE METEOROLOGICAL AND HYDROLOGICAL MEASUREMENTS

- BY GROUPING THEM UNDER EVENTS THAT REPEAT THEMSELVES EVERY 10, 20, 50, 100, 1000 OR MORE YEARS.

- PAVARESISHT SE NE PERPUNIMIN STATISTIKOR TE SERIVE TE MATJEVE PERFISHISET NE NJE FARE MENVRE EDHE NDIKIMI I NDRYSHIMIT TE KLIMES, INXHINIERVE PROJEKTUES U LINDIN DISA PYETJE:
CLIMATIC CHANGES AND IRRIGATION RESERVOIRS

- How credible are the series year old 30, 40 50 in existence today?
- How credible is the dependence lifted from the available data?
- How credible are the extrapolation?
- What would most likely happen if the dependence of the temperature increase does not follow a straight line?
CLIMATIC CHANGES AND IRRIGATION RESERVOIRS

- Failure to interpret accurately the above data would cause the following:

  Huge reserves left out in the design stage which is translated into otherwise high costs,

  Risk of a dam destruction and consequently flooding which is a disaster to the settlements down below it.

- Images down below depict irrigation dams in which partial destruction of its part has occurred,

- Fortunately with no problems in its lower parts.

- But this does not mean that this good luck would stay with us forever.
CLIMATIC CHANGES AND IRRIGATION RESERVOIRS

- By taking stock of the initiatives under way we hope that with an increase of the temperature across the globe measures will be adopted in our country:
  - To protect, and
  - Contribute to the reduction of its increasing trends.

- Thanks for your share of attention.