Project
“RIVERTWIN-Central Asia”

SCENARIOS of DEVELOPMENT: THE KEY APPROACHES

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(Tashkent, April 08-11, 2006)

“RIVERTWIN- Central Asia”:
One of main objectives … SD

- **SCENARIOS of DEVELOPMENT (SD) … for RBs:**
- **- GERMANY: Neckar RB - 13.000 square km**
- **- BENIN (Africa): Queme RB – 30.000 square km**
- **- CENTRAL ASIA:**
- **Chirchik-Akhangaran Basin (ChAB – 21.900 sq. km):**
- **- Kyrgyzstan (KR): Chatkal RB (upstream) – 13.7%**
- **- Kazakhstan (RK): Keles RB –15.1%**
- **- Uzbekistan (RU): Tashkent province (TP) – 71.2%:**
- **- Chirchik and Akhangaran RBs**
- **THE BASIC ACCENT …SD for TP:**
- **TP HAS NOT ONLY MAXIMAL AREA IN ChAB …**

SCENARIOS of DEVELOPMENT
THE BASIC SCENARIOS

- **- THE CLIMATIC _____ (Dr. G.Stulina)**
- **- THE ECOLOGICAL _____ (Dr. I.Ruziyev)**
- **- THE SOCIO ECONOMIC ___ (V.Prikhodko)**
- **- THE AGRARIAN _____ (Dr. S.Nerosin)**
- **- WATER MANAGEMENT _____**
- **- WATER RESOURCES CHANGES_____**
- **- WATER USE in AGRARIAN SECTOR ____**
- **- PUBLIC PARTICIPATION _____**
- **- SOME OTHER_____**

SCENARIOS of DEVELOPMENT
THE KEY APPROACHES

- **ORIENTATION ON:**
- **- the OFFICIAL SCENARIOS of DEVELOPMENT _(-)**
- **- HIGH RATES of ECONOMIC DEVELOPMENT _ (+)**
- **- LOW RATES of GROWTH of the POPULATION (+)**
- **- PRIORITY INVESTMENT of an AGRICULTURE (-)**
- **- DEVELOPMENT of SMALL and AVERAGE BUSINESS (-)**
- **- NOT CAPITAL-INTENSIVE TECHNOLOGIES (-)**
- **ACCENT ON:**
- **- REALIZATION a BASIN PRINCIPLE of WRM (+ -)**
- **- ON NATURE PROTECTION MEASURES (+ -)**
- **- STRONG PUBLIC PARTICIPATION (-)**
- **- TECHNOLOGY of the SAVINGS of WATER (-)**
- ***- AS a WHOLE: ON INTRODUCTION of IWRM PRINCIPLES***

THE KEY APPROACHES:
SD: CLIMATIC

- **MODELING RESUTS SHOWS:**
- **- water resources (WR) by 2030 will not happen**
- **- in Ahangaran basin increase can amount for 3 - 9%, Chatkal – 2-6%, Pskem it can decrease by 3%.**
- **More disturbing trend is found in ice stock:**
- **- areas of glaciers for last 20 years were reduced to 17%, in comparison with 1960 (Pskem RB)**
- **- by estimations, to 2020 the glaciers will be lost yet less by than 17% and the general loss of weight of glaciers will make 1/3 from volume of glaciers in 1960**
- **- snow melting contribution is expected less by 5-10% and rain contribution more by 7-10%, that will increase the flood phenomena. In general, flood frequency increase is most important negative consequence.**

THE KEY APPROACHES:
SD: ECOLOGICAL

- **1.**
- **2.**
- **3.**

THE KEY APPROACHES:
SD: SOCIO ECONOMIC

- **1.THE FREE MARKET _____ (?)**
- **CONSEQUENCES … :**
- **(UNPREDICTABLE)**
- **2. CONTROLLED MARKET _____ (?)**
- **ADVANTAGES … :**
- **- MAINTENANCE (FUEL + …)**
- **- THE CREDITS**
- **- GUARANTEES of SELLING**
- **- + …**

THE KEY APPROACHES:
AGRARIAN (DISPUTE QUESTIONS)

- **1. FREEDOM of a CULTIVATED CULTURES' CHOICE _____ (?)**
- **3. THE FREE PRICES _____ (?)**
- **CANCELLATION of the**
- **STATE ORDER ON a**
- **COTTON And GRAIN _____ (?)**
- **CONSEQUENCES: …**

THE KEY APPROACHES WATER MANAGEMENT

- **1. ChAB as a WATERECONOMY UNIT**
- **(FORMER ChAKIR)**
- **2. ChAB as a WATERECOLOGICAL UNIT**
- **ChAB - AS IS CONSIDERED by the PROJECT "RIVERTWIN"**
- **ONE OF WAYS:**
- **CREATION of a TRIPARTITE COMMISSION:**
- **FROM the REPRESENTATIVES:**
- **ChABAIS (Tashkent province, Uzbekistan)**
- **+ DJALALABAD BWO (Djalalabad province, Kyrgyzstan)**
- **+ RSE "YUGVODKHOZ" (Shymkent province, Kazakhstan)**
- **+ OTHER "STAKEHOLDERS"**

WATER MANAGEMENT: POLITICS and WATER LAW

- **1. WATER MANAGEMENT: POLITICS**
- **Political basis for implementation of IWRM at all water management levels (transboundary, national, local) is available …**

- **2. WATER MANAGEMENT: WATER LAW (in light of IWRM):**
- **- Water Code of the Republic of Kazakhstan (2003)**
- **- Water Code of the Kyrgyz Republic (2005)**
- **- Law of the RUzbekistan «On Water and Water Use» (1993)**
- **- basin principle of WRM (+)**
- **- public participation (+): WUA (KR); ACC of WU (RK); *WUA (RU: Law)***
- **- water pricing: RK (+), KR (+), RU (-)**
- **- water demand management (-), still … water requirements**
- **- other aspects (incentives +). … Implementation of regulations (-)**

THE KEY APPROACHES
SDs: THE THEORY

- **1. SIC ICWC developed different SDs …:**
- **1.1. *«Optimistic»(OS). Under «OS»:***
- **- population growth rate… by 2020 down to 1.0%/yr.**
- **- water consumption in irrigation … 9.4th.m3/ha…**
- ***1.2. «Business as usual» (BAUS). Under «BAUS»:***
- **- population growth rate… will amount for 1.9%/yr,**
- **- water consumption in irrigation – 12th.m3/ha...**
- ***1.3. «Medium» (MS). Under «medium» scenario:***
- **- population growth rate… down to 1.23 %/yr.**
- **- water consumption in irrigation will be 11.0 th.m3 /ha.**
- **Under all scenarios irrigated area will be increased**
- **Obviously, that OS realization will require revision of existing approaches to water resources use, since irrigated agriculture development is possible within existing water limits.**

THE KEY APPROACHES SDs:OFFICIAL ESTIMATIONS

- **2. In accordance with "General Scheme…", following concepts of development are accepted:**
- ***2.1. …existing rate and structure of realized measures:***
- **- agricultural production decreases in sustainable manner.**
- **- by 2015 provision by food staff in RU will decrease by 25%,**
- **- area with favorable reclamation conditions will decrease,**
- **- water and reclamation systems' technical state will grow worse.**
- **Therefore, this concept is unacceptable**
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[1] «General scheme of irrigated agricultural and water sector of the Republic of Uzbekistan for the period oup to 2015» (Summary) –Tashkent, «Vodproekt», 2002 – p.268.

THE KEY APPROACHES SDs:OFFICIAL ESTIMATIONS

- ***2.2. Stop-development (SD).*** **Under this concept:**
- **- irrigated area remains the same, new lands are not developed, all financial means are allocated to land reclamation measures and irrigation and drainage systems improvement.**
- **- by 2015 all irrigation systems should be rehabilitated and upgraded. At that irrigated area will decrease by 51,2th.ha (due to land retirement for different objects and communication systems). Provision with food will increase only by 3% (from 61 to 64%) due to irrigated hectare productivity increase;**
- **By expert estimations, this concept is also unacceptable**

THE KEY APPROACHES SDs:OFFICIAL ESTIMATIONS

- ***2.3. Maximum development (MD) = recommended development (RD).*** **Under this concept:**
- **- all measures of stop-development concept will be realized**
- **- additional irrigated lands will be developed allowing provide population with food.**
- **According to «General scheme…», there is possibility to provide necessary land, water and labor resources under any scenario of development. But only under concept of maximum development food provision, irrigated land favorable reclamation state, effective water and land resources us can be achieved.**
- **Scenario RD is based on concept of maximum development and analysis of all previous concepts' and real possibilities of investment in agricultural and water sector.**

THE KEY APPROACHES SDs:OFFICIAL ESTIMATIONS

- **THOUGH the «General scheme…» - 2015…**
- **… by us official estimations are considered … (2030)**
- **Orientation on maximum development scenario (MDC) is justified in terms of IWRM and CAB principles' adoption that will allow substantial adjustment of proposed official scenarios of social-economic development of Tashkent province.**
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- **Thus, ONLY REALIZATION of "optimistic" variants of development (OS – on SIC ICWC, MDS – on "General Scheme…") allows to satisfy needs of the population for products of a feed at an acceptable level**

THE KEY APPROACHES SDs:OFFICIAL ESTIMATIONS

- **Concept of MD is realized by two scenarios:**
- **- I scenario: Agricultural production providing population with food by 70% of average weighted volume required for full provision according to optimal food allowance;**
- **- II scenario. Agricultural production providing growing population with food by 65% against 61% currently that is in fact keeping positive trend of food provision not depending on number of population**

THE KEY APPROACHES
WATER USE: AGRARIAN SECTOR

- **It is obvious, that the realization of the “OS” of development will require reconsideration of the existing approaches to use of water resources in the ChAB-countries.**
- **In particular, by 2015 in the Tashkent province should be reduced:**
- **- need on irrigated water - on 314mln.cub.m (almost 8%)**
- **- disposal water - on 749mln.cub.m (31%)**
- **It is evident that irrigation water requirement decrease will require big efforts.**

THE KEY APPROACHES
SDs: AGRARIAN SECTOR

- **New land development:**
- **According to the Concept of MD, to satisfy own requirements, it will be needed to introduce additional 286.8 th.ha of irrigated lands in agricultural turnover in Tashkent province by 2015 (that is 64.6% of requirements of the whole republic – 444,000 ha), from which in Tashkent province itself – 40,6 th.ha, in other districts – 246,2 th.ha**
- **In view of large capital intensity of new land development, it is necessary at the initial stage to keep within bounds of internal development, which requires less forces and resources, and concentrate efforts on improving the effectiveness of irrigated lands being used**

THE KEY APPROACHES
SDs: AGRARIAN SECTOR

- **Reclamation condition of lands:**
- **Over the recent years, lands favorable in reclamation terms have increased by 135000 ha in Tashkent province owing to reduction in the portion of lands with satisfactory (113000 ha) and unsatisfactory (9200 ha) quality (see table). In 1998, lands unfavorable in reclamation terms amounted to 10200 ha, about 8500 ha in 2004. On the whole, lands of unsatisfactory quality are located in lower river reaches (3500 ha in Bekabad district, 2300 ha in Buka district, 2200 ha in Chinaz district, and about 500 ha in Yangiyul district).**
- **At present, lands of unsatisfactory quality in TP province amount to about 2.2%. However, for agriculture in the part of TP located in ChAB lower area (Bekabad, Buka, Chinaz, and Yangiyul districts), they represent a serious problem**

THE KEY APPROACHES
SDs: AGRARIAN SECTOR

- **THE BASIC ACCENT(STRESS) - on increase of productivity of agrarian cultures**
- **In particular – restoration… Fields' Change**
- **Analysis shows:**
- **(СоюзНИХИ: cotton, for 50 years):**
- **- monoculture, without fertilizers _____ 14,7c/ha**
- **- monoculture, fertilizer only НАВОЗ, 30t/ha_____ 30,7c/ha**
- **- (monoculture, entering of mineral fertilizers (N:P:K) = (150:100:75) kg/ha _____ 32,4ц/га**
- **- Fields' Change, past 5 complete rotation ___ 41,2c/ha**