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Comunicaciones académicas correspondientes al curso 2012-2013

Anexo a los Anales del Curso Académico 2012-2013 (I)

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COMUNICACIÓN REALIZADA POR EL ACADÉMICO DE NÚMERO

Excmo. Sr. Dr. Alfonso M. Rodríguez Rodríguez

COBERTURA DEL RIESGO DE COTIZACIÓN MEDIANTE ESTRATEGIAS CON OPCIONES FINANCIERAS

por el

Excmo. Sr. Dr. Alfonso M. Rodríguez Rodríguez, Académico de Número de la Real Academia de Ciencias Económicas y Financieras. Catedrático de Análisis Matemático y Matemáticas Financieras de la UB.

Coverage of the risk of trading using strategies with financial options

Communication of Prof, Dr. Alfonso Rodríguez Rodríguez, Academician of the RACEF. Head Professor of Mathematical Analysis and Financial Mathematics.

ABSTRACT

The superposition of the financial options, CALL or PUT, "in" or "out", purchase or sale, on the position in an underlying, with equal or different exercise prices, provided coverage of the underlying strategies an extensive scope that allows the investor position in the fields of the risk of volatility of share price, which can be defined with great freedom. The present work exposes different known strategies, opening up a wide field for other possible strategies. He is your exposure through their graphic representations, which is displayed visually, so the resulting quote intervals of the strategy, in which occur the profit and the loss, such as the level of these results and their possible limitations, naturally as a result of the respect for the inexcusable financial balance of accepted risk and expected result.

KEYWORDS

Financial options, strategies of financial coverage, CALL and PUT options, options *"out"* and *"in", "spreads", "straddles", "strangles", "butterfly", "condor"*.

Introducción

Toda inversión financiera cuyo rendimiento pretenda mejorar el tipo de interés del mercado del dinero conlleva siempre un cierto **grado de riesgo**. Excepción a este principio son las carteras *inmunizadas*[1], factibles sólo en tanto los mercados lo permitan. Que soportan, en todo caso, gastos y comisiones de gestión. Le es posible al inversor, no obstante, **modular** el grado de riesgo asumido. Su decisión trasciende al nivel de riesgo que debe **transmitir** a terceros afrontando él, únicamente, el **riesgo residual** necesario para mejorar el resultado que le ofrece el mercado del dinero. Siempre durante el horizonte temporal previsto para su inversión.

De antiguo, la transmisión del riesgo se ha solventado mediante la institución del **seguro**. Siempre basado en un principio mutualista, sea privado o sea asumido por una entidad privada o pública. En ambos casos se diluye el riesgo entre un amplio colectivo de personas aseguradas que permite la dilución del riesgo en un fondo común, generado por las primas satisfechas y acumulado en las reservas técnicas. Son una muestra del **aseguramiento financiero** los *seguros de cambio de divisas* y los *seguros de crédito* o seguros de contrapartida.

Recientemente, la transmisión del **riesgo financiero** se ha desarrollado con inusitado auge en los mercados de productos derivados como los **futuros** y las **opciones financieras**. Especialmente debido a la seguridad institucional que ofrecen tales mercados, a su gran liquidez y el precio reducido. En ellos se realiza la transmisión del riesgo de **volatilidad** de precios y de cotizaciones mediante la negociación de contratos financieros típicos en los mismos. No rige en ellos el principio mutualista del Seguro, sino otro **principio especulativo** que entraña la asunción del riesgo por un tercero, el especulador, recibido del inversor *hedger* cubierto.

No sería justo interpretar la figura del especulador, contrapuesta al *hedger,* como un jugador que arbitrariamente asume un resultado incierto, positivo o negativo. En los mercados de derivados –salvo en posiciones particulares no deseables– la información y la preparación técnica del especulador es muy superior a la del *hedger*, por cuanto que su éxito no se funda en el azar –que terminaría excluyéndolo del mercado– sino en su

[1] Vid. "Inmunidad Financiera". A.Rodríguez. Ediciones S. Barcelona, 1994.

anticipación del conocimiento del mercado y de las expectativas de evolución de los precios, respecto al *hedger* (si se tratase de tipos de interés de su anticipación y sus expectativas sobre la curva futura de rendimiento).

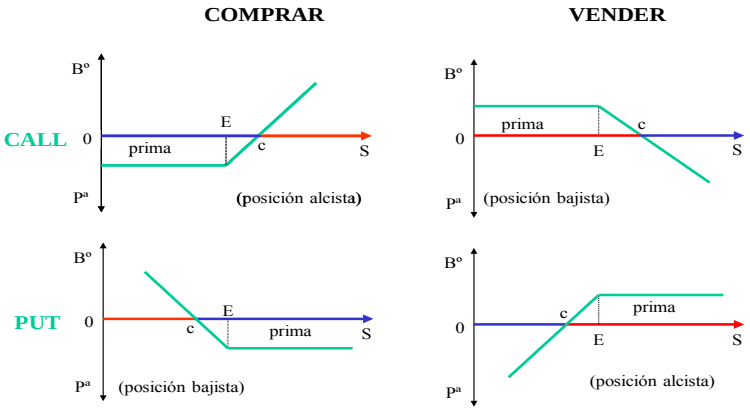
Los productos derivados no sólo se negocian en los **mercados organizados**, también **OTC** (over the counter) mediante contratos particulares *ad hoc*. Entre ambos mercados existen características que definen sus ventajas y sus inconvenientes. No obstante, la seguridad, la liquidez y el abaratamiento de las comisiones, determinan el auge de los primeros. En España existen, desde 1999, los mercados organizados MEFF Renta Fija, en futuros, y MOFEX (OMIb) en opciones.

Sólo me referiré ahora a las **opciones financieras** como instrumentos de cobertura (la pretendida por el inversor) del riesgo derivado de la volatilidad de cotización en los activos financieros que integran su inversión.

Las opciones financieras

La **opción** es un *contrato asimétrico* por cuanto otorga el ejercicio de un derecho sólo facultativo para una de las partes, parte compradora, frente a la obligación inexcusable del *ejercicio de la opción* en la parte vendedora si le es reclamado. El *contenido de la obligación* se concreta en la realización de una compraventa (compra o venta) sobre un activo financiero denominado *subyacente* a un cierto *precio de ejercicio* determinado por la opción, en fecha futura (vencimiento), si la opción es *"europea"*, o bien durante su plazo de vigencia hasta el vencimiento, si la opción es *"americana"*. En cuanto a los activos financieros subyacentes pueden serlo acciones, divisas, tipos de interés, índices bursátiles, contratos de futuros, etc. El precio de la opción se conoce como *prima*. Si la opción faculta la compra del subyacente se la denomina **CALL** y si habilita su venta se la denomina **PUT**. La conjunción de estos dos tipos, con las dos posiciones posibles *compradora* (larga) o *vendedora* (corta), define las cuatro situaciones básicas en la opción:

VALOR DE LAS OPCIONES BÁSICAS



S – cotización del subyacente.

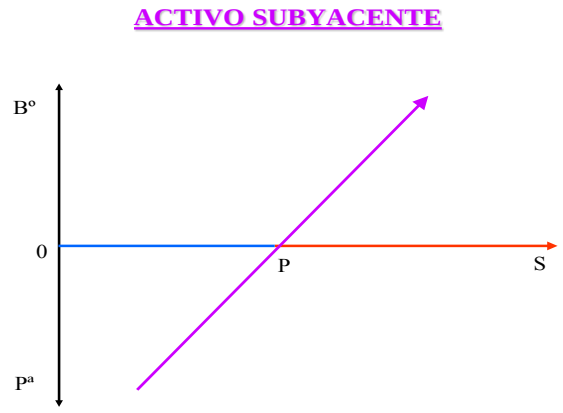
E – *precio de ejercicio.*

c – frontera del resultado, pérdida (azul) / beneficio (rojo).

Muestran los gráficos la cotización del subyacente **c** a partir de la cual la cotización creciente del subyacente genera beneficio en el ejercicio de la opción. En la compra de la CALL ascendente sin límite, una vez recuperada la *prima* (coste de la opción). Ascendente y estabilizado, con el límite de la *prima* (precio de la opción), en la venta de la PUT, Contrariamente, **c** determina la cotización a partir de la cual el subyacente genera una pérdida creciente (una vez agotada la prima) en la venta de la CALL. Y descendente con la pérdida estabilizada en la *prima* (coste de la opción) en la compra de la PUT.

Cobertura del subyacente con opciones básicas

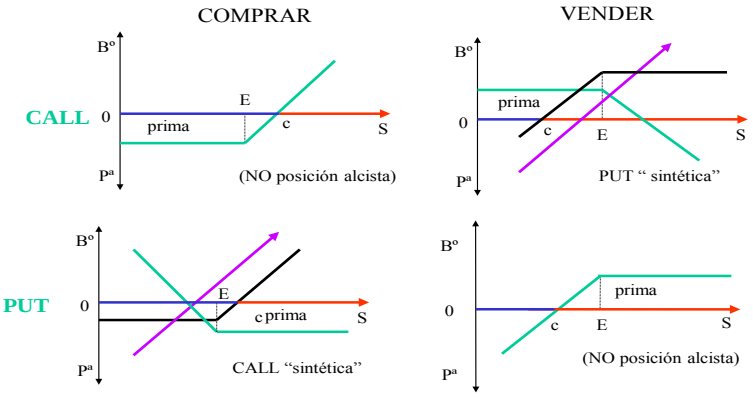
El tenedor del subyacente sin cobertura sustenta naturalmente posición alcista respecto al mismo:



P – *precio de adquisición* del subyacente.

La superposición de la opción, sobre el subyacente adquirido, refuerza la posición alcista si también lo es la posición en la opción. Contrariamente, **realiza su cobertura** si la posición en la opción es bajista. La superposición de la posición de la opción sobre la del subyacente define una *"posición sintética"*:

(POSICIÓN BAJISTA)



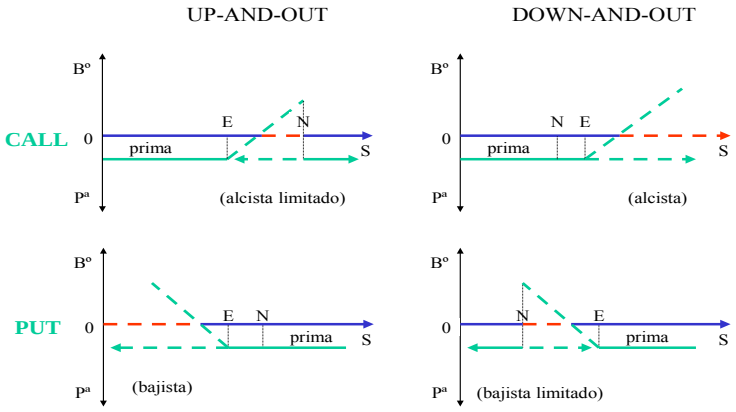
La traza **negra** representa la CALL o la PUT *"sintética"*.

La venta de una CALL *cubre* parcialmente la pérdida posible, anticipando el beneficio pero siempre a costa de limitar el futuro beneficio. La compra de una PUT retrasa el beneficio, pero *limita* la pérdida. Naturalmente tales coberturas del subyacente implican siempre un cierto coste compensatorio de la protección lograda.

Opciones condicionadas "OUT" E "IN"

La condición **out** es una condición *resolutoria* de la opción, por cuanto ésta se desactiva cuando la cotización del subyacente alcanza el *nivel de salida,* impidiendo entonces su ejercicio. Por el contrario, la condición **in** es una condición *suspensiva* de la opción, por cuanto se activa cuando la cotización del subyacente alcanza el *nivel de entrada.* Ambas restricciones abaratan la *prima* siendo por ello muy apreciadas en los mercados. Ambas pueden ser **up** o **down**, según que alcancen el respectivo nivel de *salida* o de *entrada* ascendiendo o bajando en la cotización del subyacente. Como todas las demás, la posición del inversor puede ser *compradora* (larga) o *vendedora* (corta).

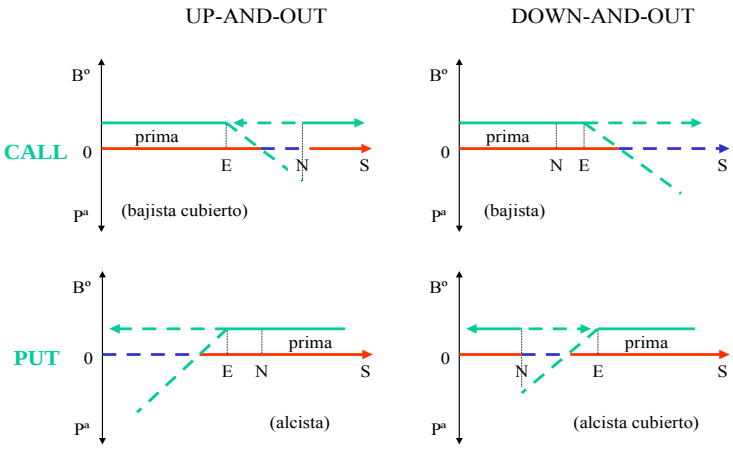
OPCIONES "OUT" (compra)



E – *precio de ejercicio.*

N – *nivel de salida.*

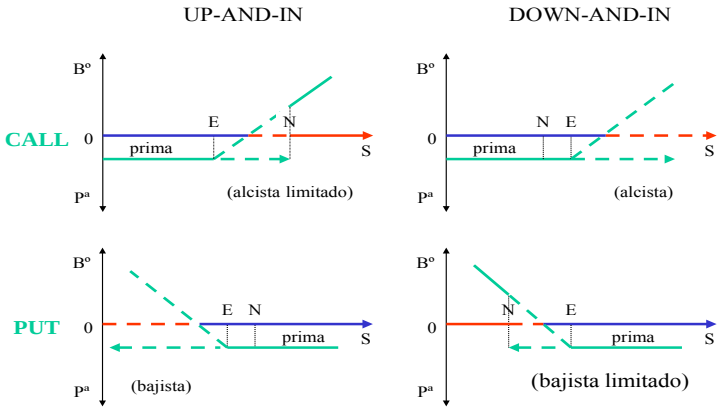
OPCIONES "OUT" (venta)



E – *precio de ejercicio.*

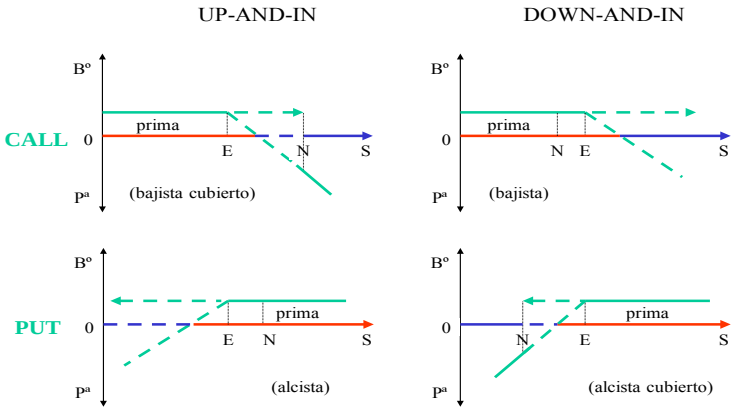
N – *nivel de salida.*

OPCIONES "IN" (compra)



E – *precio de ejercicio.*

OPCIONES "IN" (venta)



N – *nivel de entrada.*

E – *precio de ejercicio.*

N – *nivel de entrada.*

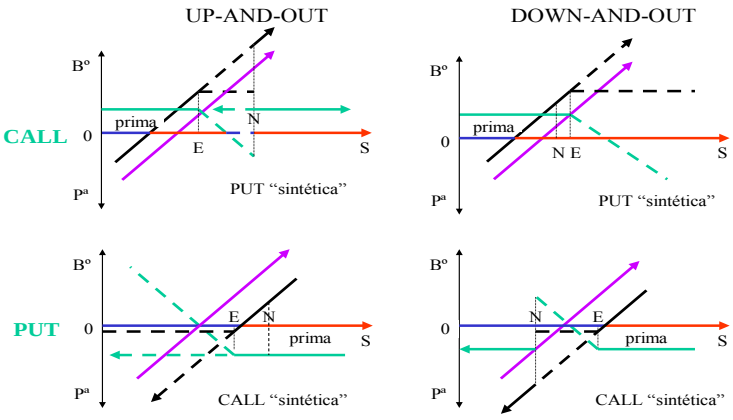
Cobertura con opciones "OUT" E "IN"

Tanto las condiciones **out** e **in** desvían los resultados de las *opciones sintéticas* en atención a su cumplimiento, resultando más complejas las expectativas de cobertura.

A diferencia de la cobertura con opciones básicas, en estas opciones condicionadas la *posición* alcista o bajista en la cobertura puede no hallarse bien definida.

Cobertura del subyacente con opciones "out"

(POSICIÓN BAJISTA)

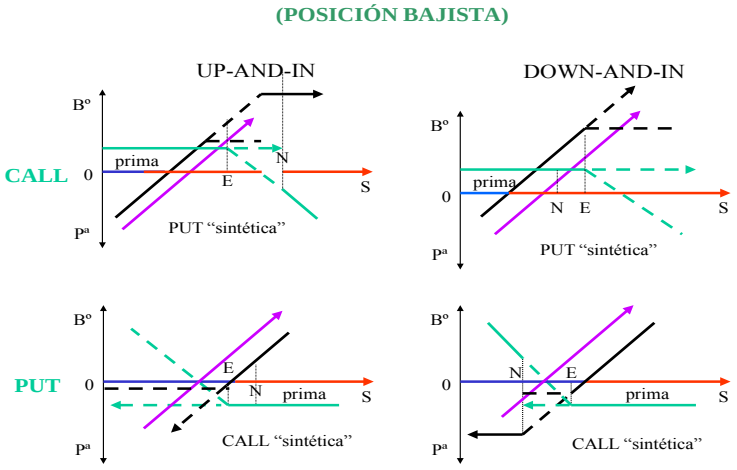


La traza **negra** representa la posición cubierta.

E – *precio de ejercicio*

N – *nivel de salida*

Cobertura del subyacente con opciones "IN"



La traza **negra** representa la posición cubierta.

E – *precio de ejercicio*

N – *nivel de entrada*

La venta de una CALL, **out** o **in,** en cualquier caso y con diferente resultado, incrementa el posible beneficio y también la posible pérdida, anticipando la cotización origen del beneficio. La compra de una PUT **out** o **in**, en cualquier caso y con diferente resultado, disminuye el posible beneficio y limita la pérdida, aplazando la cotización origen del beneficio. Tales coberturas suponen a la decisión inversora una mayor complejidad que las coberturas básicas, unida a una mayor capacidad para la administración de su riesgo.

Otras opciones condicionadas

Son múltiples las variantes de las opciones consideradas básicas para acomodarse a las diferentes expectativas o preferencias de los mercados. Algunas suponen un importante reto para su valoración. La relación de variantes nunca será exhaustiva. Las opciones *"up-and-out", "down-and-out", "up-and-in"* y *"down-and-in",* son tan sólo pauta para otras posibles estrategias inversoras. Las opciones con posición bajista en la cobertura son aptas para la cobertura del subyacente. Damos breve noticia de algunas de las opciones más conocidas:

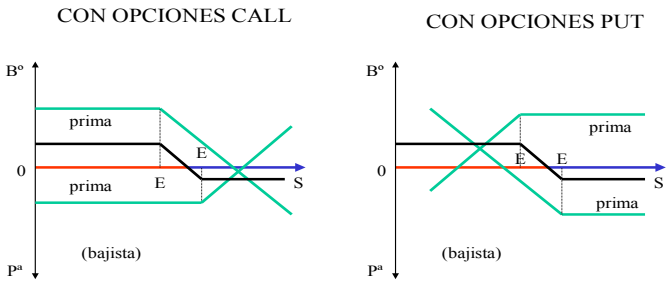
- Opciones "asiáticas", donde el precio final de referencia se fija en una media aritmética de los precios del subyacente en intervalos regulares (15 días por ejemplo). Suavizan la volatilidad y reducen el precio de la opción (particularmente aplicadas a divisas).
- Opciones *"ladder"* donde las opciones básicas se someten a varios niveles tales que si uno es sobrepasado por encima (opción CALL) o por debajo (opción PUT) es garantizada la diferencia con el precio de ejercicio.
- Opciones al *"mejor"*, *"peor"*, *"suma"* o *"resultado"* de dos o más activos.
- Opciones *"quanto"* (suma, utilizadas en divisas). Opciones *"lookback"* (el máximo o el mínimo en el plazo es el *precio final de referencia*, o bien es *el precio de ejercicio*). Opciones *"cliqué"* (suma de resultados periódicos ATM sobre una opción simple), opciones *"americanas con pago diferido",* opciones *"sobre opciones"*. Opciones *"you choose"* (pueden definirse como CALL o PUT), etc.

Estrategias complejas

Son combinaciones de estrategias básicas. Citamos algunas que permiten la *posición bajista*, apta para cubrir, siquiera sea parcialmente, el riesgo de cotización del activo subyacente.

SPREAD

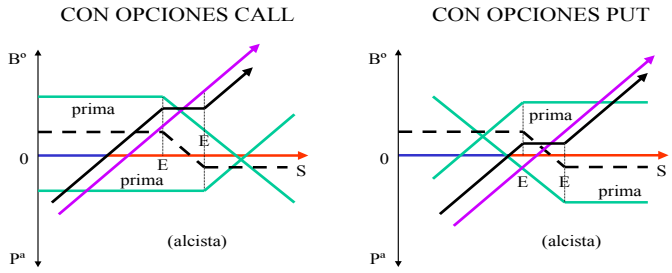
BEAR SPREAD



La traza **negra** representa la *"opción mixta"* (CALL o PUT) resultante. Son combinaciones de compra y venta de opciones de un mismo tipo (CALL o PUT), con diferentes precios de ejercicio (en los *spreads verticales,* de vencimientos (en los *spreads horizontales*) o en ambos (en los *spreads diagonales*).

Cobertura con BEAR SPRED

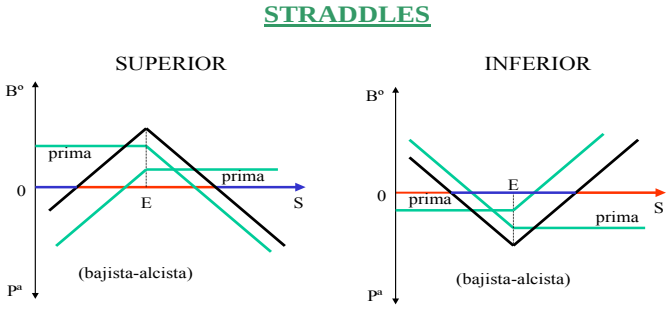
(SPREAD VERTICAL)



La traza **negra** representa la posición cubierta.

Las opciones representadas anticipan la cotización origen de beneficio, aumentándolo, estabilizándolo y reduciéndolo, según los diferentes tramos, siempre con aumento de la posible pérdida.

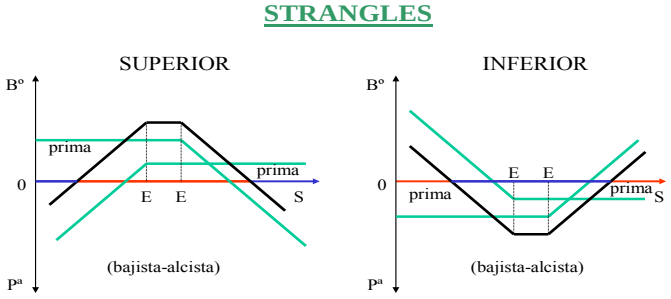
STRADDLES



La traza **negra** representa la *"opción mixta"* (CALL o PUT) resultante. El *straddle superior* combina venta de una CALL y una PUT, simul-táneamente sobre un mismo subyacente con igual precio de ejercicio (venta del *straddle*).

El *straddle inferior* combina compra de una CALL y una PUT, simultáneamente sobre el mismo subyacente con igual precio de ejercicio (compra del *straddle*).

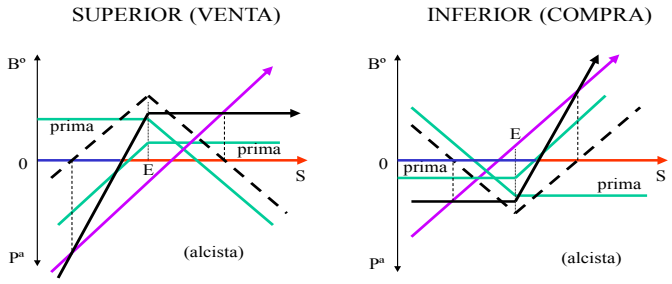
Cobertura con STRADDLES



La traza **negra** representa la posición cubierta.

El *straddle superior* anticipa la cotización origen de beneficio, estabi-lizándolo después. El *straddle inferior* lo retrasa, estabilizando despues la pérdida. Ambos modifican los resultados del subyacente.

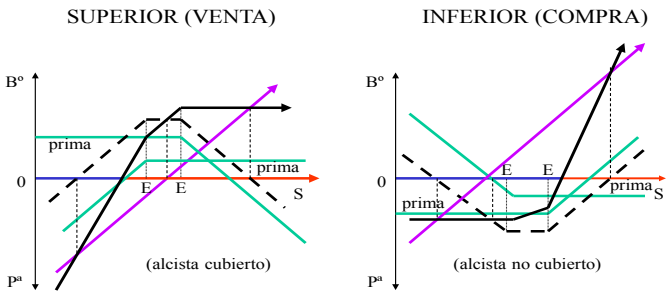
STRANGLES



La traza **negra** representa la *"opción mixta"* (CALL o PUT) resultante. El *strangle superior* combina venta de una CALL con precio de ejercicio alto y una PUT con precio de ejercicio más bajo, sobre un mismo subyacente, con mismo vencimiento (venta del *straddle*).

El *strangle inferior* combina compra de una CALL con precio de ejercicio alto y una PUT con precio de ejercicio más bajo, sobre un mismo subyacente. con mismo vencimiento (compra del *strangle*).

Cobertura con STRANGLES



La traza **negra** representa la posición cubierta.

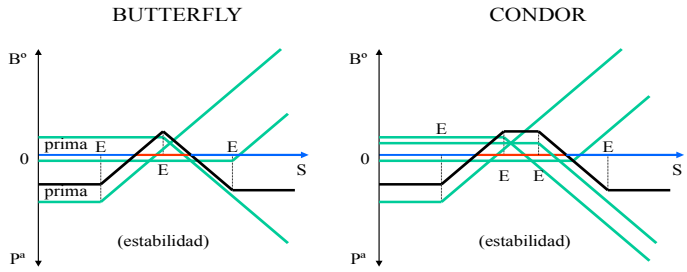
El *strangle superior* anticipa la cotización origen del beneficio, estabilizándolo después.

El *strangle inferior* lo retrasa, estabilizando después la pérdida.

Ambos modifican el resultado del subyacente.

BUTTERFLY Y CONDOR

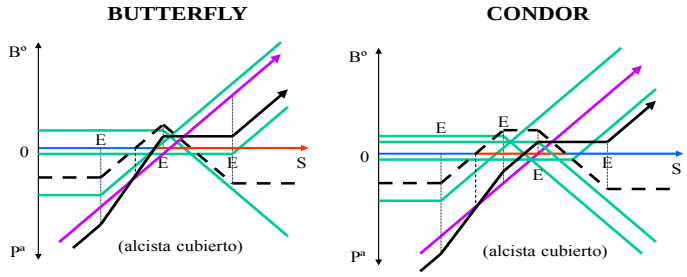
OPCIONES BUTTERFLY Y CONDOR



La opción *butterfly* combina la compra de dos opciones CALL, a precios de ejercicio alto y bajo respectivamente, con la venta de una CALL a un precio de ejercicio intermedio. Las tres con el mismo vencimiento.

La opción *condor* combina la venta de dos opciones CALL, a precios de ejercicio alto y bajo respectivamente, con la venta de dos CALL, a precios de ejercicio intermedios. Las cuatro con el mismo vencimiento.

COBERTURA CON OPCIONES BUTTERFLY Y CONDOR



La traza **negra** representa la posición cubierta.

La opción *butterfly,* atendiendo a los intervalos de cotización, estabiliza el resultado modificando el beneficio y la pérdida en otros.

La opción *condor,* atendiendo a los intervalos de cotización, estabiliza el resultado modificando el beneficio y la pérdida en otros.

A modo de conclusión

La pretensión de este rápido barrido en el extenso e inagotable campo de las estrategias de cobertura con opciones financieras, limitado a aquellas que generan posiciones bajistas útiles para la cobertura del riesgo de cotización del subyacente, no ha sido otra que la de sugerir otras posibles estrategias de cobertura diferentes, estrategias *a la carta.* Tales, adaptadas a una decisión particular de cada inversor en asumir –y consiguientemente también en transmitir– un cierto *nivel de riesgo* reduciendo con ello su posible *nivel de rentabilidad.* Condicionadas tales estrategias a sus particulares expectativas sobre la volatilidad de la cotización reflejada en tramos, en donde aspira alcanzar ambas, la rentabilidad y la cobertura.

La *agregación* de las posiciones parciales, componentes de su estrategia, revierte en la estrategia final resultante, la que permite una fácil representación gráfica como las ya expuestas. Mediante ellas es sencillo *visualizar* la posición adoptada por el inversor ante el riesgo de pérdida, y su aspiración al posible beneficio, mediante la observación, en dicha representación gráfica, de su delimitación y acotamiento.

Tales técnicas, de la denominada *ingeniería fiscal,* eficiente, son útil correctivo ante el excesivo riesgo que otros productos financieros comportan, cuando tan sólo contemplan opciones simples o primarias[2].

[2] La comunicación expuesta incluye aspectos tratados en la conferencia impartida por el autor el 25 de febrero de 1999 en la Universidad Rovira i Virgili de Tarragona.

COMUNICACIÓN PRESENTADA POR EL ACADÉMICO CORRESPONDIENTE PARA SUIZA

Excmo. Sr. D. José Daniel Gubert

LA UNIÓN EUROPEA Y LAS NUEVAS GENERACIONES. LO QUE TODOS DEBERÍAMOS SABER Y NO OLVIDAR

por el

Sr. D. José Daniel Gubert

ABSTRACT

Durante la celebración del Solemne Acto Académico conjunto con la *Fondation Jean Monnet pour l'Europe* el día 6 de junio de 2013 en Lausana, se puso claramente de manifiesto que uno de los principales problemas para continuar, con éxito, la construcción de la Unión Europea, es el creciente euroescepticismo que se desarrolla en casi todos los países de la Unión. Además, en muchos de ellos, existe un número significativamente importante de ciudadanos que se deja atraer por argumentos ultranacionalistas de una extrema derecha más o menos xenófoba, frontalmente contraria a mantenerse dentro de la Unión Europea (en países importantes como Francia, el Reino Unido, Holanda y, hasta cierto punto la misma Alemania, entre otros).

Mientras escuchaba las interesantes conferencias y debates, pensaba que, con el paso del tiempo, este sentimiento euroescéptico puede ampliarse entre los ciudadanos de las nuevas y futuras generaciones, si no se toman las medidas adecuadas. Jóvenes que han nacido después de los años ochenta del siglo pasado, que no han vivido ni directa ni indirectamente las consecuencias de la II Guerra Mundial, que no sienten la zozobra del riesgo de guerra entre los países miembros, que no han conocido los controles de policía y de aduana en las fronteras, ni los avatares de los riesgos de cambio de sus monedas, que encuentran natural el poder trabajar y residir libremente en cualquier país miembro en los que se reconoce el grado o título de sus estudios, etcétera. Jóvenes que han recibido una información insuficiente del origen y de los objetivos de la UE y, lo que es más peligroso, sometidos al bombardeo de malas noticias, sobre todo en largos períodos de crisis como el que todavía vivimos. Jóvenes de 18 a 22 años, que cada cinco son llamados a votar por primera vez para las elecciones al Parlamento Europeo, cuya información es, en general, incompleta o, lo que es peor, sesgada.

Para subsanar esta indeseable situación, candidata a empeorar con el paso de los años, hace falta definir e implantar un inteligente, sólido y persistente esfuerzo de información pedagógica por parte de las Instituciones de la Unión Europea, de los gobiernos, de las universidades y de los medios de comunicación.

El objetivo principal de este trabajo, fundamentalmente de carácter didáctico, es el de contribuir a comprender mejor el papel que representa la Unión Europea en nuestras vidas, resumiendo lo que todos deberíamos saber y no olvidar de ella, en especial las nuevas generaciones.

La paz, primer gran objetivo alcanzado

En 1943, unos dos años antes del fin de la II Guerra Mundial, el francés Jean Monnet (1888-1979) redactó una nota de reflexión, dirigida al Comité de Liberación Nacional francés. La lectura de sus primeros párrafos no tiene desperdicio:

"Se aproxima el final de la guerra. Los aliados la ganarán. Por lo tanto, llega el momento de pensar en la paz. En el año 1918 ganamos la guerra. En 1919 perdimos la paz. La perdimos porque no se estableció una solidaridad en la que vencedores y vencidos fueran tratados de la misma manera. Tenemos que evitar un nuevo Tratado de Versalles…

…Ahora ganaremos la guerra, pero también debemos ganar la paz… No habrá paz en Europa si los Estados se reconstituyen tomando como base su propia soberanía nacional. Con lo que ello supone de política de prestigio y de proteccionismo económico… Los países de Europa son, en general, demasiado pequeños para asegurar a sus poblaciones la prosperidad que las condiciones modernas permiten y exigen. Les hace falta mercados más amplios…".

Las reflexiones de esta nota constituyeron la base de las iniciativas que se materializaron ulteriormente:

- La instalación y la consolidación de la paz. En efecto, llevamos un período de cerca de 65 años sin guerras. Tendríamos

que retroceder unos 600 años para hallar una etapa de paz tan larga entre los países de la Unión.

- El camino escogido por "los padres de la Unión Europea", fue el de comenzar con medidas de tipo económico, en lugar de privilegiar las medidas de carácter político.

En resumen, conviene no olvidar que la PAZ es el primer objetivo alcanzado por la UE.

Jean Monnet y el plan Schuman. De las reflexiones a los hechos

Jean Monnet es la personalidad que más ha influido en la definición y el arranque de la Unión Europea. Buen observador, pragmático y prudente, tenía la virtud de saber analizar cada situación desde un punto de vista global.

Finalizada la guerra, Jean Monnet redacta y somete al Ministro de Asuntos Exteriores de Francia, Robert Schuman (1866-1963), la siguiente propuesta:

"Es necesario modificar el curso de los acontecimientos. Se hace necesaria una acción profunda, real, inmediata y dramática que restituya a los ciudadanos de Europa la esperanza en la que empiezan a no creer. A través de la puesta en común de productos tan básicos como el carbón y el acero y la creación de una nueva institución llamada "Alta Autoridad", que tomará decisiones que sean vinculantes, se establecerán las primeras bases concretas de una federación europea indispensable para la preservación de la paz".

Robert Schuman hace suya esta propuesta y, con el acuerdo del gobierno francés, la anuncia el 9 de mayo de 1950. Justo antes había informado e invitado a adherirse a Konrad Adenauer. Por primera vez después de la guerra, Alemania era tratada en igualdad de condiciones que los demás países europeos. Se acababan de establecer las bases para la definitiva reconciliación entre Francia y Alemania. Y se empezaba a pasar de las reflexiones a los hechos.

La comunidad del carbón y del acero (CECA) y el MCE. Primero, la economía

Jean Monnet, no contento con esta primera experiencia, escribió la siguiente reflexión en mayo de 1950:

"En realidad, Europa no ha existido nunca. No es con la suma de soberanías reunidas en un consejo que se crea una entidad. Hace falta establecer una verdadera Europa, que pueda hablar y actuar con fuerza ella misma y que tenga confianza en su propio futuro frente al mundo".

Esta declaración llevó a la preparación y posterior firma del Tratado de Roma, que estableció el entonces denominado Mercado Común Europeo (MCE). Se creó desde el principio con la firme voluntad de abrir las fronteras de los primeros seis países participantes (Francia, Alemania, Italia, Países Bajos, Bélgica y Luxemburgo) a la libre circulación de personas, bienes, servicios y capitales.

La gran novedad fue la clara vocación económica del Tratado, dejando para etapas posteriores las de carácter más político, que obligan a los estados miembros a la cesión de parcelas de soberanía. Este enfoque permite comenzar y progresar. Cuando los éxitos son notorios, es más fácil introducir las de carácter más político. Formaba parte de lo que se ha dado en llamar "el método Monnet".

Instituciones y tratados. Los cimientos de la construcción de la UE

Los hechos demuestran que la construcción europea es muy compleja. Integrar económicamente, socialmente y políticamente 28 países con grandes diferencias entre todos ellos y, además, bastantes con una débil tradición y experiencia democrática, requiere tiempo. Mucho tiempo. El mismo tiempo que requieren las Instituciones de la UE para absorber nuevas responsabilidades a medida que se van adoptando nuevos tratados que amplían notablemente su campo de acción. Citaré las tres Instituciones más importantes:

- El Consejo Europeo, constituido por los jefes de estado o de gobierno.

- El Parlamento Europeo. Consta de 766 diputados elegidos democráticamente cada cinco años, el mismo día en cada país. Fundamentalmente, discute y adopta la legislación europea, aprueba el presupuesto de la UE y efectúa un control democrático de las otras instituciones.
- La Comisión Europea, con sede en Bruselas, tiene un carácter cada vez más ejecutivo y con capacidad sancionadora.

La complejidad de la construcción y del funcionamiento de la UE se complica aún más durante los 12 a 18 meses que preceden a las elecciones legislativas de un país importante (Alemania, Francia, Reino Unido). Se produce un frenazo en la solución de ciertos problemas en particular y en la construcción europea en general. Lo acabamos de vivir con las elecciones alemanas y, hace dos años, con las francesas. A mi parecer, una solución relativamente fácil de adoptar sería la de unificar la duración de las legislaturas de cada país, por ejemplo a cinco años, y decidir que las elecciones en cada estado tengan lugar durante el mismo año. Esta decisión haría que el frenazo durara un año cada cinco (quedarían cuatro para "trabajar y construir"…) y no como actualmente, en que el "parón" se produce cada uno o dos años.

El euro. Cesión de soberanía, pero gradualmente

Después del Tratado de Roma se han firmado cinco nuevos Tratados relevantes. El más importante de todos ellos ha sido el de Maastricht (1992). En él se adoptó, entre otras decisiones, la creación de la Unión Económica y Monetaria, que desembocó, diez años más tarde, en la puesta en circulación del euro (lo adoptaron 12 países de la UE. Hoy son 18). La moneda única requirió la creación del Banco Central Europeo (BCE), lo cual supuso, por primera vez en la historia de la UE, una importante cesión de soberanía de los países que lo adoptaron. A pesar de ello, es oportuno reconocer que el euro nació con carencias técnicas tan importantes como los controles centrales bancario, presupuestario y fiscal.

En realidad, los responsables de poner en marcha la moneda única sabían muy bien que, si se quería comenzar con todos los aspectos técnicos resueltos…, probablemente aún no tendríamos el euro en el mercado, a

causa, precisamente, de la importante cesión adicional de soberanía que iba a suponer.

Parece lógico concluir que "los padres del euro" aplicaron el mismo principio adoptado por "los padres de la UE": dar prioridad a las ventajas de tipo económico. Las de carácter político (cesión de más soberanía), ya se introducirían más tarde: cuando sería peor eliminar el euro que mantenerlo y reforzarlo. Es decir, añadir la unión bancaria en una próxima etapa, ahora en estudio avanzado, y, más adelante, unos controles presupuestarios y fiscales de los países que hayan adoptado el euro.

Las crisis siempre han reactivado la Unión Europea

Decir que la UE está en crisis permanente no es exagerado. Ahora mismo, por ejemplo, aún no hemos terminado de salir de la crisis financiera y del euro, que ya se prevé la que se aproxima: el riesgo de una participación muy floja a las elecciones al Parlamento Europeo del próximo mes de mayo.

Las causas de las crisis son internas de la UE, o bien externas, o una combinación de ambas.

Así por ejemplo, ya en 1954 los seis países fundadores de la CECA quisieron promover la Comunidad Europea de Defensa, pero la Asamblea Nacional francesa la rechazó, pues esta nueva iniciativa exigía un control supranacional. Se había querido ir demasiado lejos demasiado pronto. La crisis que provocó, propició el proyecto del MCE, con unos objetivos de integración marcadamente económicos.

Otros ejemplos de crisis por motivos internos son los que podríamos llamar de "aprendizaje", a medida que el número de países miembros ha ido creciendo hasta los 28 actuales. Y también como consecuencia de ciertos cambios regulares de gobierno después de votaciones legislativas.

Es notorio también que muchas de las crisis han sido la consecuencia de causas externas a la UE, como por ejemplo, en 1956 la guerra del Canal de Suez, en 1973 la crisis del petróleo, mientras que la que

todavía vivimos, la financiera y la del euro, han sido provocadas por una combinación de causas externas e internas.

Ahora bien, la experiencia demuestra que después de cada crisis se encuentran soluciones para que la construcción europea se reactive. Jean Monnet lo resumió muy bien: "Siempre he pensado que Europa se construiría dentro de las crisis, y que sería la suma de las soluciones que se aportarían para resolverlas".

Más Europa

Desde la creación del MCE, hace casi 60 años, el mundo ha cambiado de manera extraordinaria. El número de países ha pasado de 74 a más de 200 y los de la UE lo ha hecho, hasta ahora, de 6 a 28. El crecimiento demográfico y el PIB de la UE ha bajado considerablemente de manera relativa con respecto al resto del mundo, mientras que el desarrollo de los grandes países emergentes nos hace entrar en una especie de mundo multipolar, es decir, que la hegemonía ya no es, como antes, cosa de tres (EE UU, UE y Japón).

Para negociar positivamente con estos nuevos bloques político-económicos, es indispensable poder hacerlo desde una posición fuerte que, hoy por hoy, la UE no tiene. Angela Merkel lo admitió ya en junio de 2012: "Necesitamos más Europa". Lo cual quiere decir, por ejemplo:

- En el campo económico y financiero, introducir un verdadero control bancario de los países que han adoptado el euro. Y más tarde, un control de manera que los presupuestos y la política fiscal de cada país se mantengan dentro de unos parámetros convenidos.
- En el campo institucional, potenciar las responsabilidades legislativas del Parlamento y las ejecutivas de la Comisión, al mismo tiempo que se limitan las de los jefes de estado o de gobierno (Consejo Europeo), transformando esta Institución en un Senado con funciones de cámara territorial.
- En materia de defensa, establecer una verdadera política de seguridad y de defensa común.

- En materia de formación, investigación e innovación, hacer un gran esfuerzo para volver a situar Europa entre los bloques de vanguardia.

En este sentido, las elecciones al Parlamento Europeo del próximo mes de mayo, y las sucesivas, ofrecen nuevas oportunidades para aumentar el carácter democrático de las instituciones europeas. Logrando que los ciudadanos de la UE voten masivamente en clave europea y no en clave nacional, como ha sucedido demasiadas veces en el pasado.

El euroescepticismo crece. ¿Por qué?

Básicamente, por las siguientes razones:

- La cesión de soberanía que suponen las actuales y las nuevas etapas de la construcción europea.
- Los planes de austeridad y los "recortes" que afectan sobre todo al "estado del bienestar"
- La incapacidad de los dirigentes europeos de comunicar a sus ciudadanos y, en especial, a las nuevas generaciones, los objetivos clave de la UE (la paz, afrontar mejor la globalización conjuntamente que individualmente, la libre circulación, la formación internacional y su compatibilidad, la moneda única, etcétera)
- El efecto negativo provocado por un sector cada vez mayor de medios de comunicación que encuentran más interesante dramatizar los problemas y los aspectos menos positivos, que los hay, mientras pasan "de puntillas" sobre los positivos, que son menos mediáticos, como sucedió recientemente cuando se otorgó el Premio Nobel de la Paz a la Unión Europea.

Cabe esperar y desear que las campañas electorales de los partidos políticos españoles, y también las de otros países, sean animadas por los mejores candidatos para el Parlamento Europeo, evitando proponer personas sin la capacidad, la proyección internacional y la ilusión necesarias para contribuir positivamente a la construcción europea.

Más pedagogía

Cada cinco años tienen derecho de voto al Parlamento Europeo, por primera vez, ciudadanos de 18 a 22 años. Estas "nuevas generaciones" estarán cada vez más alejadas, en el tiempo, de las que vivieron directa o indirectamente las consecuencias de la Segunda Guerra Mundial, el final de la cual propició el inicio de la Unión Europea con un primer objetivo, hoy alcanzado y consolidado: la PAZ.

Estos jóvenes ciudadanos y los futuros, que dan por hecho, como una cosa natural, la paz, la libre circulación sin fronteras ni aduanas, la moneda única, los cursos internacionales Erasmus, etcétera, necesitan información, una información que les induzca al entusiasmo. Por lo que se ha hecho, se está haciendo y lo que falta por hacer. En pocas palabras, hace falta más pedagogía. Este esfuerzo debería hacerse a diferentes niveles. A título de ejemplo:

- Por parte de las propias Instituciones de la UE, es decir, el Consejo Europeo, el Parlamento y la Comisión. Tendrían que definir un plan de comunicación objetivo y fácil de comprender, recordando los hechos que motivaron la creación de la UE actual, los éxitos evidentes alcanzados hasta ahora y las etapas que faltan para obtener un grado de eficacia plenamente satisfactorio.

Para asegurarse de que las nuevas generaciones de todos los países reciben esta información de manera objetiva y completa, tendrían que dedicarse unas horas lectivas obligatorias en todos los primeros y segundos cursos universitarios de cualquier carrera, así como en las escuelas especiales.

- Día de Europa. Es el 9 de mayo en memoria del día de la declaración de Robert Schuman anunciando la creación de la CECA. Hoy es un día que pasa prácticamente inadvertido para la mayoría de ciudadanos de la UE. Debería aprovecharse para hacer "ruido positivo" en su favor.

- También cabe esperar que los medios de comunicación europeos contribuyan a resaltar las buenas noticias procedentes de la Unión por lo menos en el mismo grado en que lo hacen con las malas.

En resumen, se dibujan tres opciones para el futuro de la UE:

- Su ruptura pura y simple, preconizada por los ultraconservadores de la extrema derecha,
- Limitar su acción a temas únicamente económicos, apoyada por los euroescépticos,
- Continuar la construcción europea para llegar, en su día, a una Unión completamente integrada, como unos Estados Unidos de Europa (EUE) o una Confederación Europea CE).

Hacer más pedagogía pues, es contribuir a hacer más Europa. Y a consolidarla.

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COMUNICACIÓN REALIZADA POR EL ACADÉMICO CORRESPONDIENTE PARA ITALIA

Excmo. Sr. Dr. Giancarlo Elia Valori

WATER GOES GLOBAL. A GEOPOLITICAL ANALYSIS

por el

Excmo. Sr. Dr. Giancarlo Elia Valori

Prologue

It is a great honor and a privilege for me to introduce to English readers the works of Prof. Giancarlo Elia Valori. Currently there are few people in the world who can boast his same achievements.

Any attempt to summarize the goals reached by this statesman would be vain and would fall short of his accomplishments based on his influence and involvement in many initiatives fostering peace and security.

In his works, which whet the reader's appetite for research and further knowledge, G.E. Valori seems to easily find his way through the connections, contrasts and evolution of modern thinking at international level, so that his analyses go well beyond history and philosophy.

Briefly I think he has deep and enlightened knowledge not only of the world, but also of international relations.

G.E. Valori was born in Meolo, few miles away from Venice, on January 27, 1940, but has mainly lived in Rome. After graduating in Economics and Business Administration, as well as in Political Sciences, he attended many post-degree courses in Italy and the United States, and was assistant Professor in the Institute for Economic Studies in Denver, Colorado.

Furthermore, at the beginning of his managerial career, he had important consultative assignments for the "Compagnie Financière Conseil" of Edmond Rothschild in Paris, the International Monetary Fund in Washington in relation to specific studies on the issues of exchange rates and the reform of the international monetary system and the General Secretariat of the United Nations Economic Commission for Latin America and the Caribbean (UNECLAC).

In his long career as University Professor and careful observer of

the international political and economic situation, he worked for many prestigious Italian and foreign companies. Currently he chairs the merchant bank "La Centrale Finanziaria Generale S.p.A.", the Foundation Laboratory for Public Administration and the Italian Delegation of the Abertis Foundation.

Thanks to his versatile commitment as manager, professor and economist of international renown, he is unanimously regarded by the Italian community as a significant point of reference for the "privatisation of large companies" because he successfully finalised the privatization of the Groups SME-Società Meridionale Finanziaria and Autostrade per l'Italia, of which he was also President.

As staunch supporter of the building of modern infrastructure, he has tangibly contributed both to the operation of the Kiev-Odessa highway, which is bound to be the core connection between the highways of "Corridor 5" and "Corridor 9" in the Baltic area and the surrounding region of the Black Sea, and the building of the Karakaya power station and dam in Turkey, when he led Italstrade S.p.A.

His mission of tackling and solving complex problems is one of the most important characteristics of G.E. Valori's activity to serve his country. Indeed, he has always been regarded as "ambassador" of Italian culture and companies, which he has promoted all over the world.

He has been bestowed many awards in Europe, Asia and America, among which it is worth mentioning the life award of "Honorable" of the Académie des Sciences de l'Institut de France, which is the same as the status of "immortel". G.E. Valori has been the first - after another Italian, Cardinal Jules Mazarin, more than three centuries ago to be bestowed said award. Subsequently he was appointed "Honorary President" of the prestigious International Foundation where, to pay tribute to his mother (who was awarded the Gold Medal for Civil Merit by the President of the Italian Republic), he established the "Fondation Emilia Valori de l'Académie des Sciences" de l'Institut de France which, inter alia, is active in protecting traditional ethnic and popular poems and songs.

Again in France, he was appointed Officer of the "Legion d'Honneur" with the motivation by French President François Mitterand

reading as follows: "He is a man who is able to look beyond borders to understand the world". That award was "conquered on the field" since in 1988 he succeeded in obtaining the release of three French journalists of Jewish origin, abducted in the Lebanon, three years before, by the Islamic group "Organisation de la Justice Révolutionnaire".

Nevertheless there are many other countries who hold G.E. Valori in high esteem and bestowed significant awards to him, including Italy, where he was awarded the title of "Knight of Grand Cross" and "Knight of Labour of the Italian Republic".

A life spent as leader of large private and state-owned companies has not prevented him from operating with great commitment and dedication in the multi-faceted cultural world: he has been appointed by UNESCO "Goodwill Ambassador" for his commitment in spreading and promoting the heritage of knowledge in its highest and noblest significance.

He also holds important Chairs for peace studies in the Yeshiva University of New York, the Hebrew University of Jerusalem and the Peking University, one of oldest and most prestigious universities in Beijing, where future Chinese leaders are educated and trained. G.E. Valori is not only the first European who can boast to be "extraordinary Professor" of international economics and politics, but also chairs the "Euro-China Centre", an institution which contributes to develop profitable exchanges between countries of different culture. In the Jerusalem University he is also Director of a specific degree course at the Law Faculty open both to Jewish and Arab students.

The friendship binding G.E. Valori to Israel has been nurtured in this framework and was publicly expressed on March 3, 1993 when the Ben Gurion Centre was opened at the Peking University. On the occasion of that historic event, the then Ministry for Foreign Affairs and close friend of Professor Valori, Shimon Peres, said: "G.E. Valori built a sound and significant bridge between Israel and China – a goal which could not be reached without his far-sightedness and dedication".

The most fascinating aspect of this gentleman is his ability to open his readers' eyes on everyday life, where we are all equal and united

by the universal values of humanity, ethnicity, nationality and social classes which tend to equate.

While reading and studying his works, everybody may be motivated to learn in greater detail, from authoritative thinkers, our shared past and present to pave the way for a new and modern "enlightenment" of our times.

His most recent books include: Geopolitica e strategia dello spazio (Rizzoli 2006), Antisemitismo, olocausto, negazione (Mondadori 2007), Mediterraneo tra pace e terrorismo (Rizzoli 2008), Il futuro è già qui (Rizzoli 2009), La via della Cina (Rizzoli 2010).

As tribute to his versatile commitment as academic and writer of International renown, G.E. Valori was awarded the journalistic prize "Ischia Mediterraneo" and the prestigious honour of "Knight of the Grand Cross of the Order of Comopa" by the "World Council of Pan-Africanism" (COMOPA), which is an award bestowed only on African Heads of State and Government and high-ranking officials, such as Nelson Mandela, Kofi Annan and Boutros Boutros Ghali. He was also awarded the "2011 Great Literary Prize" for his commendable contribution to Africa's progress in various sectors ranging from international diplomacy to geopolitical studies, which enabled him to fully contribute to the African history as early as the 1980s, and to remove old forms of ethnic discrimination with a view to achieving common ground and convergence in the field of civilisation, progress and peaceful coexistence.

R.A.ROTHSCHILD

Illustration 1: G. E. Valori; R. A. Rothschild

Introduction

Human well-being and ecosystem health are being seriously affected by changes in the global water cycle, caused largely by human pressure. The quantity and quality of surface- and groundwater resources, and life-supporting ecosystem services are being jeopardized by the impacts of population growth, rural to urban migration, and rising wealth and resource consumption, as well as by climate change.

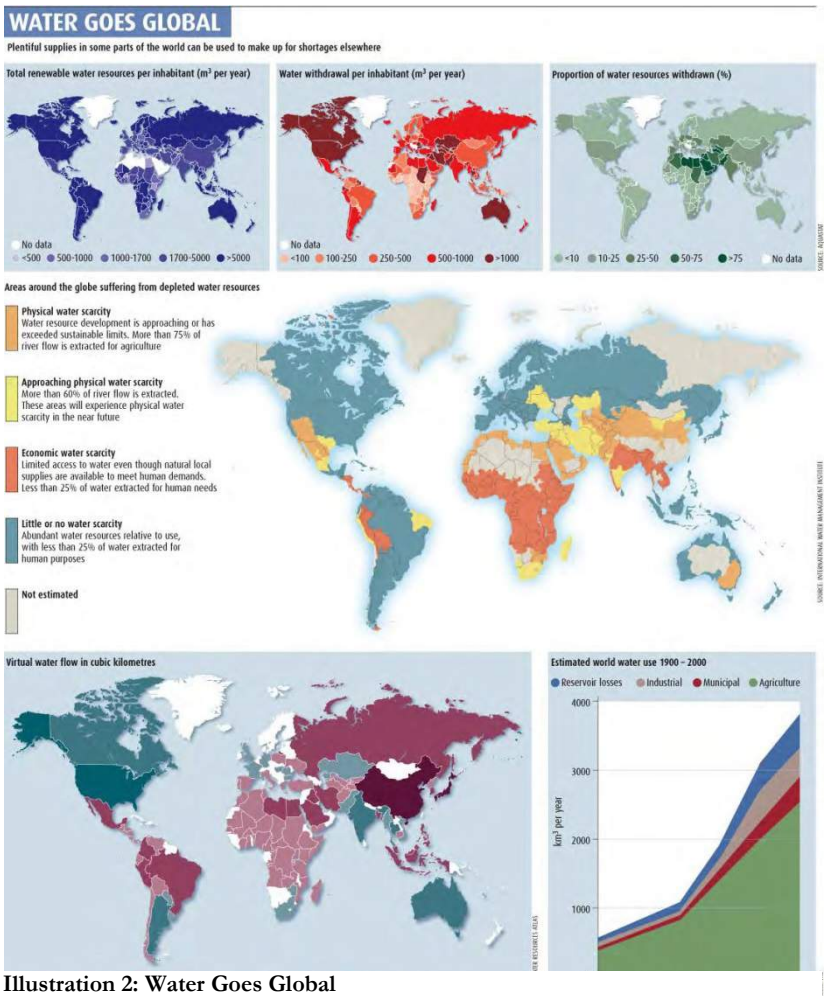


Illustration 2: Water Goes Global

The world will face structural water shortage and, hence, of food, directly affecting life expectancy, diseases, demographic and social developments. The socio-economic consequences of these destabilizing changes are potentially immense. Over the next few years, management strategies of water resources will be a major international geopolitical issue. Concerted global actions are needed, to address the root causes, balancing environmental and development needs, and to avoid the insurgence of potential international conflicts. This requires a sustained combination of technology, legal and institutional frameworks, within an innovative approach, since conventional political and economic strategies appear inadequate.

67% of the earth surface is covered by water, but only 3% of it is suitable for human use and just 1% of it can be directly used by human beings. Agriculture, accounts for more than 70% of global water use. One third of the world's population is experiencing insufficient access to water for basic sanitation and hygiene and for nutritional and biological needs[1]; 1.1 billion human beings are suffering from the scarcity of drinking water. 3 million people die from water diseases each year in developing countries, the majority of whom are children under the age of five. Water contaminated by microbes remains the greatest single cause of human illness and death on global scale.

Water consumption doubles every twenty years, twice the rate of population growth: in 10 years of time, demand will exceed by more than 50% availability and over 2.5 billion people will have to cope with severe water shortage. Global warming will worsen the situation by doubling the water needed for irrigation. By 2025 the world will have reached the peak of water stress, and the high energy costs for the extraction and purification of water will determine the prices of primary goods and the distribution of capital investments in the water and food sectors.

The globalization of agribusiness implies that cost increases recorded in productions located in Third World countries will immediately be reflected on prices on the markets of developed countries. Projections suggest, that the increase of water costs in Third World countries will

reach 35% by 2025, and that it will be reflected on food prices, with an increase of 14%.

More importantly, water shortage will determine the ecologic destabilization of large areas of the world, currently devoted to agriculture. The enormous quantity of capital necessary to re-establish the ecological and social balance in those areas will have to be borne by nations and international organizations, since agribusinesses lack any interest in doing so, unless forced by effective, local or international norms, which currently don't exist.

Over the last few years, the U.N. approach to environmental, hydro-geological and food issues has been slowly changing. With specific reference to the 2015 deadline, the U.N. *Millennium Development Goals*, which apply to all its 191 member States, are an important guideline for the geo-economic evaluation and management of national resources. However, the political complexion of many third world nations benefiting from international aid is no longer the one which was originally conceived by the United Nations. In early 1990s it was thought that the "Third Wave" of global democracy would positively change marginal economic areas, but today analysts often speak about countries under a stable condition of "no-war-no-peace". Past experiences taught, that international aid often creates political classes of *rentiers,* which turn it into the financial tool for their shift towards economic illegality.

According to analysts of the Davos World Economic Forum, more than 260 rivers cross at least one border between nations; the highest degree of protectionism worldwide is recorded in the agricultural sector, the most "water-intensive" one; water is increasingly necessary for the extraction of natural gas and oil. Nations will ever more resort to shared water resources, thus creating the requisites for international strategic conflicts, substantially different from traditional "economic wars" of the past. In terms of *game theory,* the choice for nations will be to cooperate in exploiting common water resources or - if the model makes a plural and non-cooperative, "Nash-style" behavior more profitable - to enter into "wars for water", whose form and strategic identity are currently hard to predict. While cooperation optimizes the use and distribution of resources, a non-cooperative attitude may destabilize

the neighboring river states more than traditional war. The legion of international laws regarding the management of water resources is directed at rendering non-cooperative attitudes very expensive, also at political level: this of course doesn't eliminate the possibility of a strategic *free rider*. Control over transnational water areas - and the related monitoring of "environmental disasters", which may cause the partial destruction of water resources – may not be exercisable neither by single nations, nor by multilateral agreements.

The prevailing political and economic strategies designed around oil-based energy, i.e. around a finite resource, differ radically from those conceivable and necessary for a reusable resource like water, that impacts very directly people's health and nourishment. While oil issues epitomize the unstable balance between finance, production, transportation and technology, the geopolitics of water is the fundamental paradigm of the link between agricultural production, climate, people's survival and the cycle of renewable energies. Egypt is an historical example: the protection of the Nile springs has been a central issue in the Egyptian strategic planning since the Pharaohs. In other words, the issues regarding water security – and hence the autonomy of agricultural production and people's basic survival - have historically been and will continue to be essential in building nations' strategic equations.

The management of water resources is and will be the tool for *political control,* both over the populations and the economic cycles of bordering countries – as was the case in Pharaohs' Egypt and China's "hydraulic empire" described by K.A. Wittfogel. A political option which could lead, in some Asian and African countries, to the technologically-advanced version of a new totalitarian system, poles apart from the old Euro-American political models and from those of many third and fourth world countries.

Water geopolitics is an integral part of future geostrategic assessments, as shown by the *Gulf Cooperating Council*'s choice to ensure desalination through nuclear energy, to allow the quick doubling of the working population and the preservation of current growth rates and the productive differentiation from the oil cycle.

The Manchester-capitalism, described by Ricardo and Marx,

originated in an environment, where the ecological and social consequences of the production process were not engineered in the overall cost of products. Modern global challenges cannot be faced applying the rationale and the paradigms dated back to the "Wealth of Nations". A new humanism should revise accounting principle to include the actual energy and ecologic costs of production processes, as well as the cultural and symbolic elements of economy. The world needs to "think global and act local", developing innovative concepts, creative control and management principles. As J.M.Keynes maintained, capitalistic innovation is needed to create and render new production systems, new goods and services economically viable: the future "water rush" will define form, time schedule and, more importantly, winners and losers of the next leap of productive, economic, strategic and political innovation.

Illustration 3: Zbigniew Brzezinski; Giancarlo Elia Valori; Jeane Kirkpatric

Chapter 1: Food and water: thirst or starvation?

Food consumption is basically inelastic and proportional to population size and to its demographic structure.

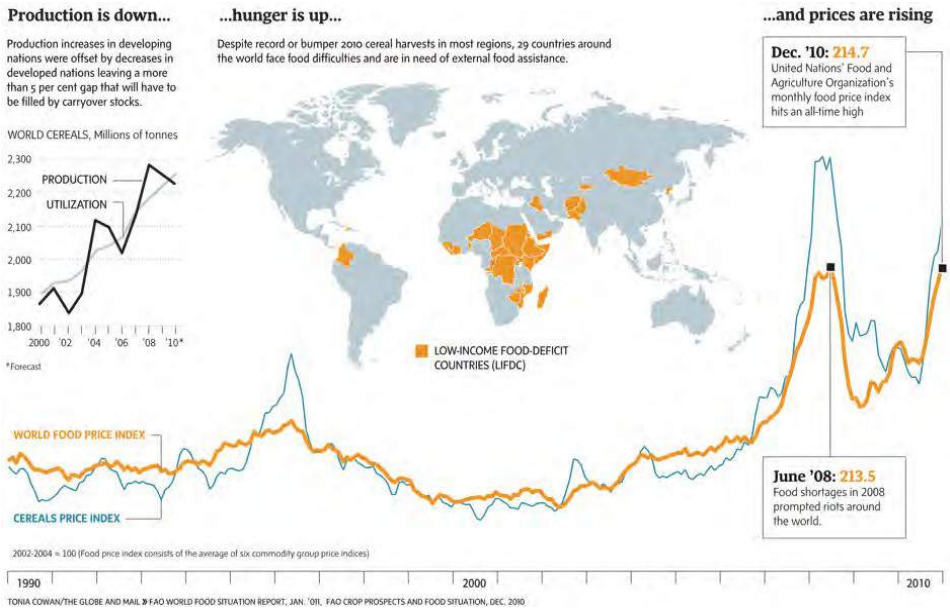


Illustration 4: Food Production, Hunger and Prices Levels

The income increase in most Asian countries has created a significant global demand for protein-rich food, which is very *water-dependent* and needs extensive vegetables cultivations for animal feed. Such development has gone to the detriment of agricultural produce affordable for lower-income people. By 2050, food demand will be 70-100% higher than the current one. From 2040 onwards, even the amount of fish-originated proteins might decrease[2].

Where will the necessary water be sourced to produce the requested food and animal feed? Furthermore, by 2050, growing megalopolises – mostly inflated by the immigration from rural crisis areas – will be responsible for about 50% of water demand[3], while arable land will be decreasing at a quick pace.

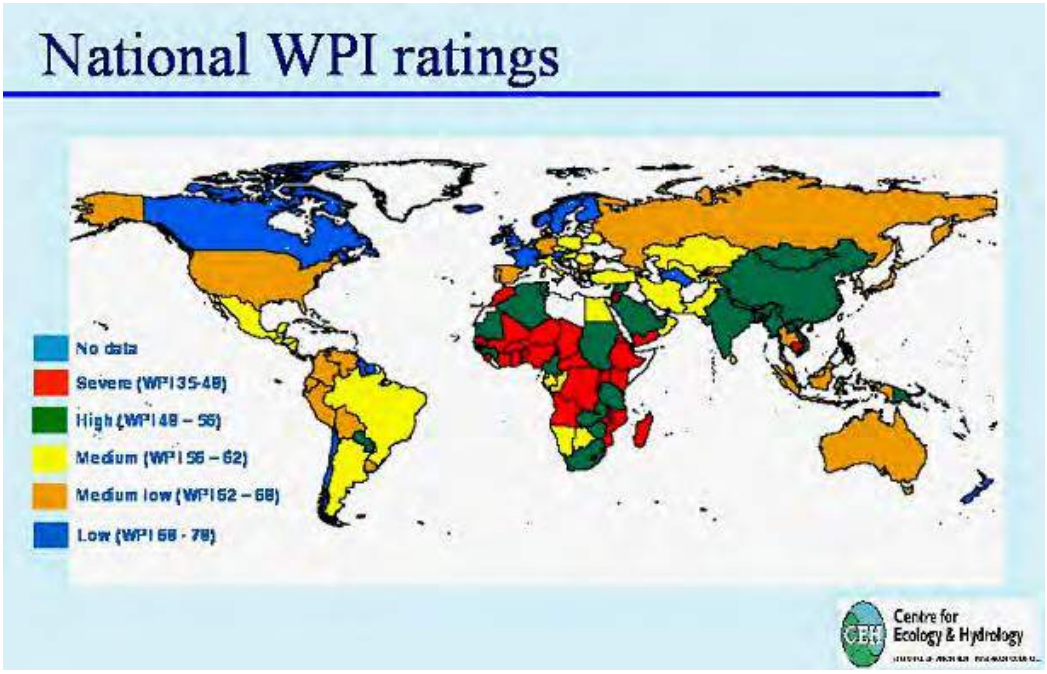


Illustration 5: National WPI ratings

World's water demand has tripled over the last fifty years and the pressure to use water for electric power production has increased by about four times as much: water for agriculture will become not only scarce, but completely insufficient, even to support 75% of the land's current productivity level. Hence, the choice will be between hunger and energy, while the average unit price of water *for both uses* will tend to increase and be subject to short-term speculation activities.

Once the pumping of fossil water reserves in India and Northern China – the two countries still heavily dependent on agriculture activities implying a higher rate of water extraction – will come to exhaustion, the worldwide extraction rate will be reduced to the replacement rate of the water already consumed[4]. This will imply - for some regions and subject to climate conditions - the sole possible choice of adopting rain irrigation, whereas more arid regions - though currently recording high agricultural productivity - will have to give up even this ancient irrigation system (which, *inter alia*, shaped human civilization after the Great Glaciations[5], from the Quaternary Period

onwards, marking the transformation of primitive humans, also at bio-mental level).

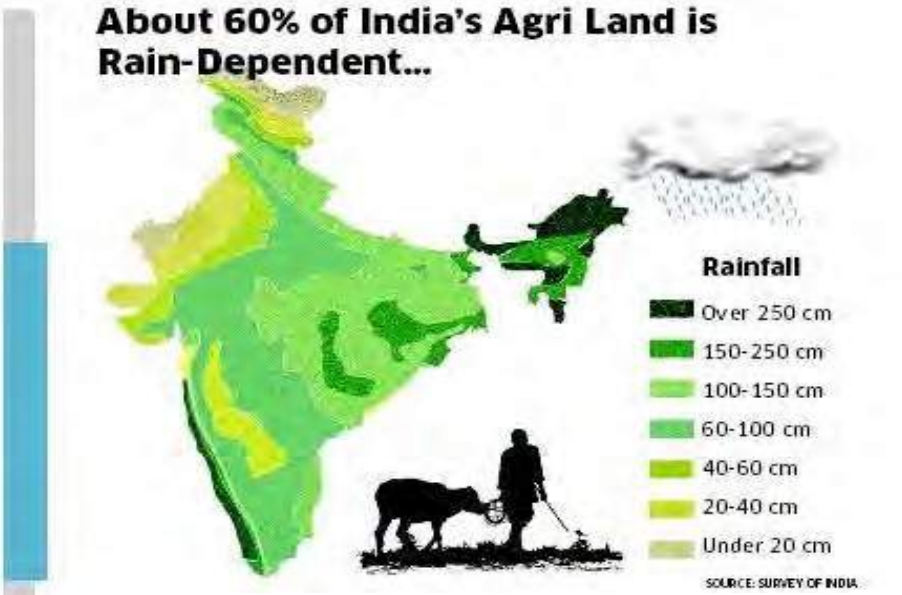


Illustration 6: Rainfall levels in India

Worldwide *water shortage for agriculture* will induce the surge of the prices for food and agricultural products, which will largely affect advanced economies, leading to speculation and protectionist temptations, following a pattern similar to the one of the oil market[6]: *the higher the increase of the product's average unit price, the larger the share of financial resources assigned to the investors not directly involved in the production process*[7].

Financial speculation on commodities - as a result of the decline of the dollar and the loss of financial attractiveness of derivatives and public bonds – will very likely generate further *increases of food prices* in the world markets.

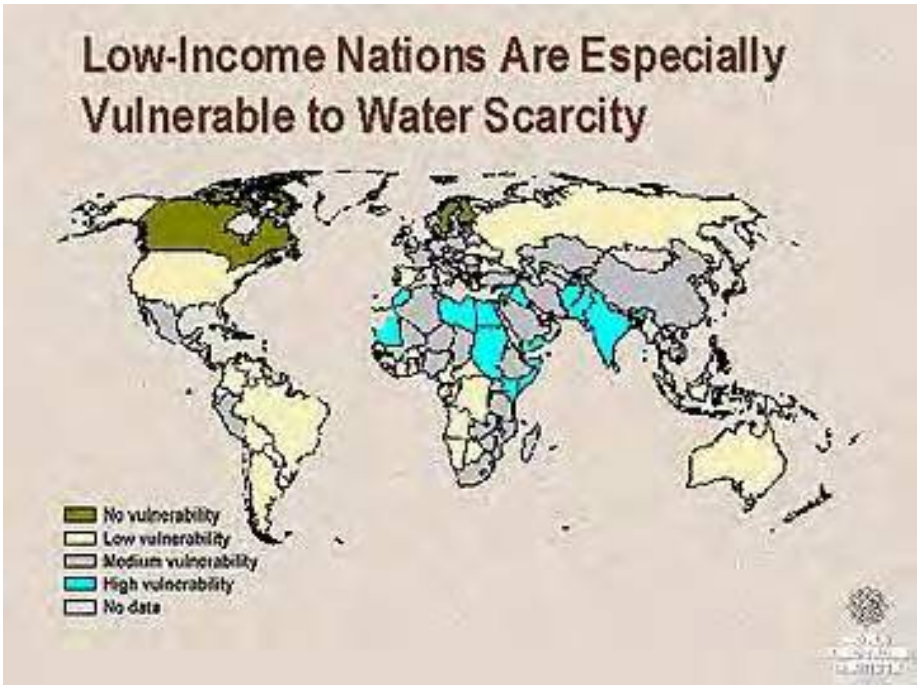


Illustration 7: Water Vulnerability on the world.

Regions recording *a higher rate of water depletion,* show the *highest poverty rates*: the availability of water, however, is essential for any development program. For those "water-deprived" populations, the choice could remain between dying of thirst as farmers or starving with very little water to drink. The *social unrests* spreading from such developments will increase significantly the number of third world countries undergoing social and economic disintegration. It is well known, that this would be the best breeding ground for local versions of the "*Sword Jihad*": from an Islamist "Komintern" logic - where Al Qaeda grants the *bayat* and hence appoints small fighting groups as its "sections"- , to a *mass "Sword Jihad", where, independently from Zawahiri's organization, various groups manage mass discontent and unemployed overpopulation in a permanent revolutionary scenario.* We could somehow speak of the shift of the "*Sword Jihad"* from the "*Caliphate in one country only*" - just to paraphrase Stalin - to a "*Permanent World Jihad*", just to, clearly, paraphrase Trotsky. This is certainly a key to interpret at least part of the "Arab Spring" rebellions[8].

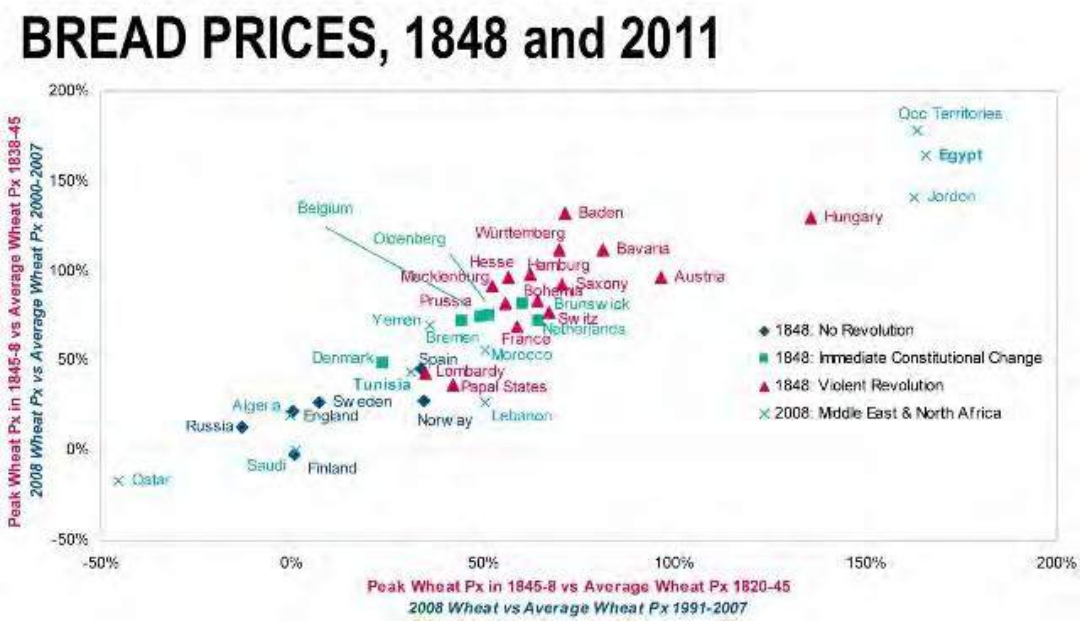


Illustration 8: Bread Prices, 1848 and 2011

The issue of the worldwide government of food markets cannot be solved by liberalization or protectionism, old tools pertaining to last century's discussions in Europe[9]. If the average unit cost of agricultural products increases - due to the scarcity of a non-renewable resource, essential for other sectors of the economy and for people's life - the protection of national agro-markets would not be effective and could instead accelerate the increase of agro-prices and their securitization. On the other hand, the liberalization of world food markets would be meaningless in the absence of a *surplus* to be exported.

Besides undermining and destabilizing agricultural production and the world's economic and socials system far beyond what free market or protectionism could resolve, water shortage reduces the ability to work and the share of people who can work in farms, especially in third world countries. 21 of the 37 endemic diseases, which are developing in the earth's peripheral areas, are inevitably linked to the agricultural

productive cycle and to the drinking water shortage. The desirable increase of water for human consumption obviously decreases the already insufficient share of water resources devoted to agriculture[10].

The relationship of availability, distribution, quality and quantity of water with the average cost of agricultural production is self-evident; more complex is the link of structural water scarcity with agriculture[11], whose increase in production costs and decrease in quality are directly proportional to water shortage.

Scarcity generates a *beggar-thy-neighbour* mechanism, which reduces the average soil productivity, differentiates agricultural products by financial, rather than by market needs, finally leading to higher average food prices, which trigger destructive social and political crises – as seen in the Maghreb region – and create financial worries to developed countries[12].

The problem is not the natural inefficiency of agricultural production, but rather the overall cultural model. The absorption rate of agriculture (70% of all water reserves available on the globe) is structural and hard to change, unless human diet and agricultural production technologies are completely changed. In the Western world, water used in nourishment - considering both the water drunk directly and the one contained in food – is estimated at 4 litres per day per person; however, at least 2,000 litres of water have been needed to grow the components of our daily diet. The minimum daily quantity of water per person has been calculated in 25 litres; whereas related activities (washing, cooking, etc.) absorb 200 litres (with peaks of 300-400 litres) per day per person in developed countries.

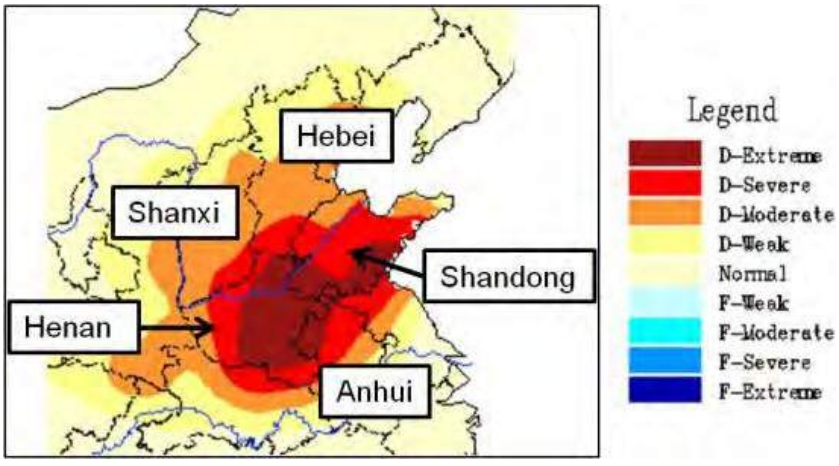
The overall reduction and the geographic equilibration of such data imply a worldwide cultural revolution, whose success requests enormous investments that countries with a prevailing agriculturally originated GDP can certainly not afford, nor fund through international investors.

Illustration 9: Giancarlo Elia Valori; Jacques Delors

Chapter 2: Water exhaustion and management dilemma

Water resources for agricultural use are threatened also by the expansion of "mature" industries - structurally "thirsty" (currently, the share of water used by the industry worldwide amounts to 10% of the total) - especially in developing countries. The picture is further complicated by population growth, directly increasing water requirements for personal consumption, accounting for 20% of the total.

The issue is particularly significant for China, the largest grain producer together with the U.S.A., who is heavily exploiting the Huai and Yellow River. Should the Chinese government experience the quick deterioration of the water resources of these two rivers, the Chinese grain production (1,000 tons of water are needed to produce a ton of wheat) would fall to 40 million tons, which are certainly not sufficient to nourish the large population of the Middle Kingdom[13]. The Chinese system of rural "communes" has been the first sector to be affected by Deng Xiaoping's "Four Modernizations", and in the future – but this will also apply to Western countries – *it will be no longer possible to change the soil productivity by political or legal action;* it will be no longer possible for nations to politically reshape the fundamentals of their production of goods and services, since price increases will hardly be manageable by means of the monetary lever or by traditional subsidies.



Ilustration 10: Worsening Drought Conditions

In India - another global "breadbasket" - the 100 million farmers of the country are using 21 million artesian wells, with an average exhaustion rate of about 50%. This is the main reason why, since 2006, India has become a net wheat importer.

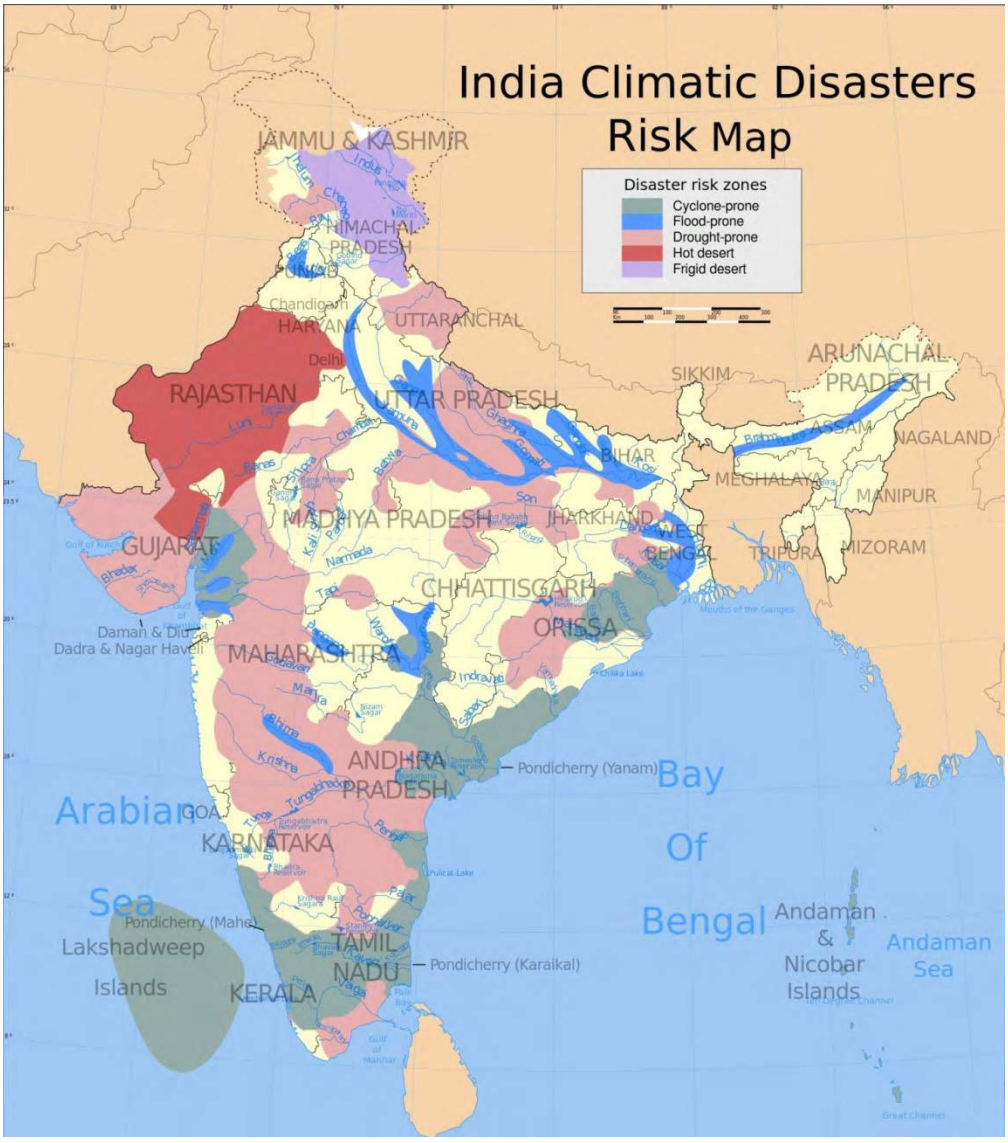


Illustration 11: India Climatic Disasters Risk Map

The issue of water exhaustion in rural areas affects also the U.S.A., as recorded by the decrease of the number of *farms* in high irrigation regions (California, Utah, Nevada, Wyoming) in the last few years. The global *leadership* in grain production has been one of the most significant factors – though not sufficiently studied – of their global power.

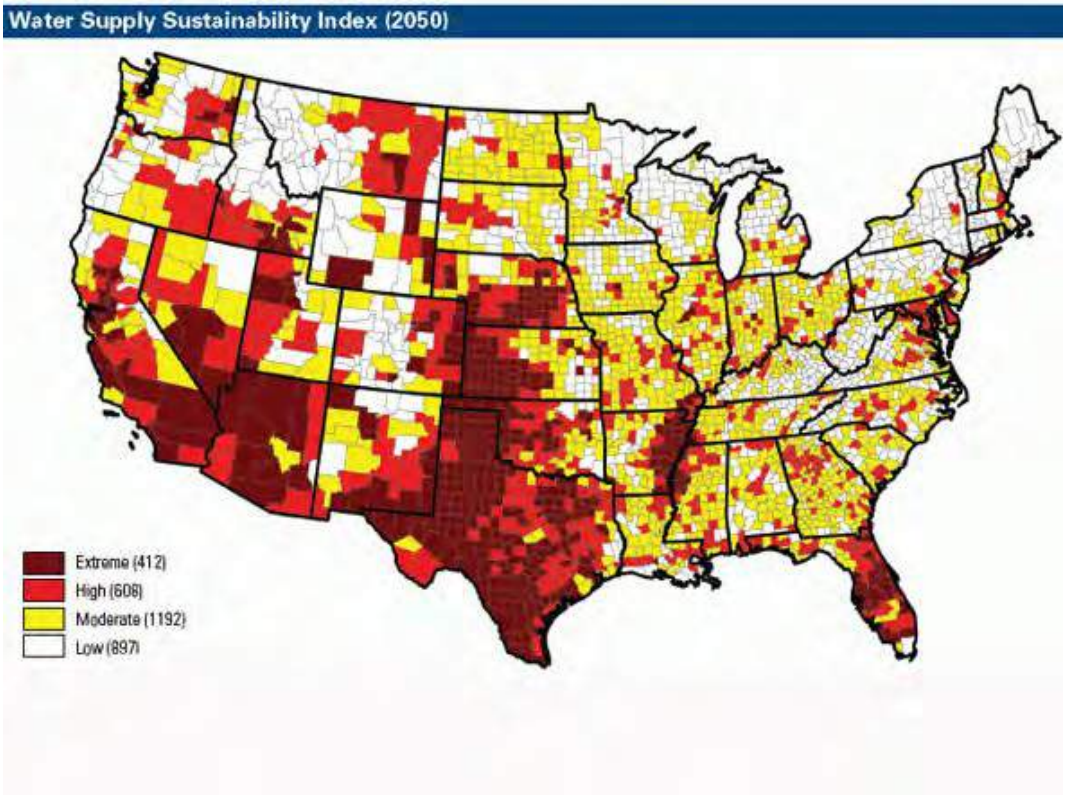


Illustration 12: Water Supply Sustainability Index (2050)

In Baluchistan and Pakistan, the artesian wells' exhaustion rate reaches 42% and 50%, respectively; the necessary depth increase of agricultural excavations is about 1 metre per year, directly affecting production costs, rendering the irrigation management unpredictable and conflicting with people's drinking and health utilizations. A negative-sum-game, which could lead to destructive social riots, by far more devastating than those experienced in the "*Sword Jihad*". As a

matter of fact, Bin Laden himself quoted the rural dimension of the "*Sword Islam*" in his communiqués[14], and has consistently supported – mainly against the "apostate" "Pharaohs" of the Arab national States - the fundamentalist revolution of the rural proletariat against the "secular" leaders and their policy of modernizing or westernizing their countries also from the productive point of view.

The link between water and food is a critical issue also in the Shia Republic of Iran, which is pumping its ever scarcer water resources at a rate of about 5 billion tons per year. In the Chenaran plain, in the North-East of the country, the water level is decreasing by about three metres per year, leading to particularly significant demographic and political consequences. The farmers' migration from the dry regions of central and northern Iran to large cities generates a sort of "water under-proletariat", who will certainly play a significant role in the future internal balances within the Shia's elite, in power since 1979[15].

In Yemen, another country of great strategic and economic importance for the Mediterranean and the Great Middle East, the extraction of deep water exceeds by five times the yearly rate of water replacement. According to the World Bank's forecasts, it is likely for the country's greatest water reserve, namely Sana'a, to be dried up within 2021. With a population increasing by 3% every year, wheat production has fallen by two thirds over the last twenty years, generating the necessity to import four fifths of its wheat requirements: the stigmata of a *failed state*[16].

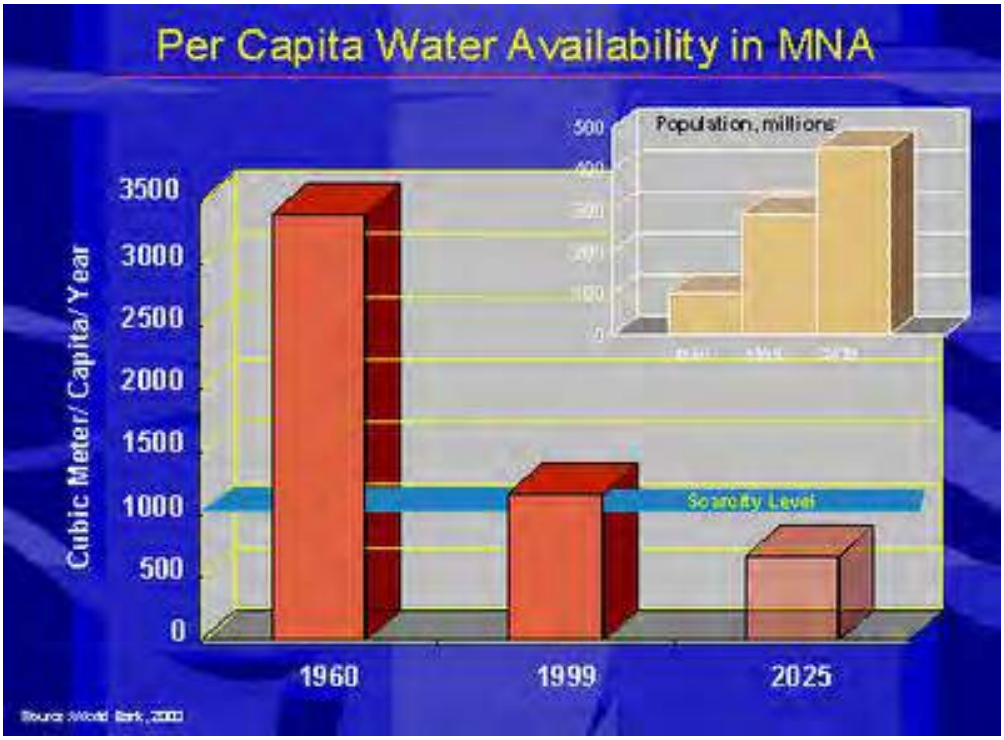


Illustration 13: Per Capita Water Availability in MNA

Saudi Arabia - where Lawrence of Arabia experienced the "sun's anvil" during his undercover operations in the desert – is sitting on very deep water basins: it is currently estimated that deep water reserves amount to about 230 billion tons. Their nature, however, makes it very expensive and energy consuming to extract. Water consumption, which is also needed for oil extraction, has been largely subsidized, distorting market conditions. The government eliminated subsidies to farmers to allow the alignment of Saudi wheat prices to international ones, but induced the fall of production by 35% and an increased dependence from international agro-markets.

To offset the structural crisis of their agriculture - mainly caused by *water shortage* - the Saudi government has started an ambitious agro-imperialistic policy, implemented mainly by its sovereign funds through the acquisition of large parcels of land in Africa and Asia, the so-called *land grabbing*. So far, the Saudi technicians are rooted in Turkey, Ukraine – the old breadbasket of the "Golden Fleece" and of Genoese merchants - Egypt, Sudan, Ka.zakhstan, the Philippines, Vietnam and Ethiopia[17]

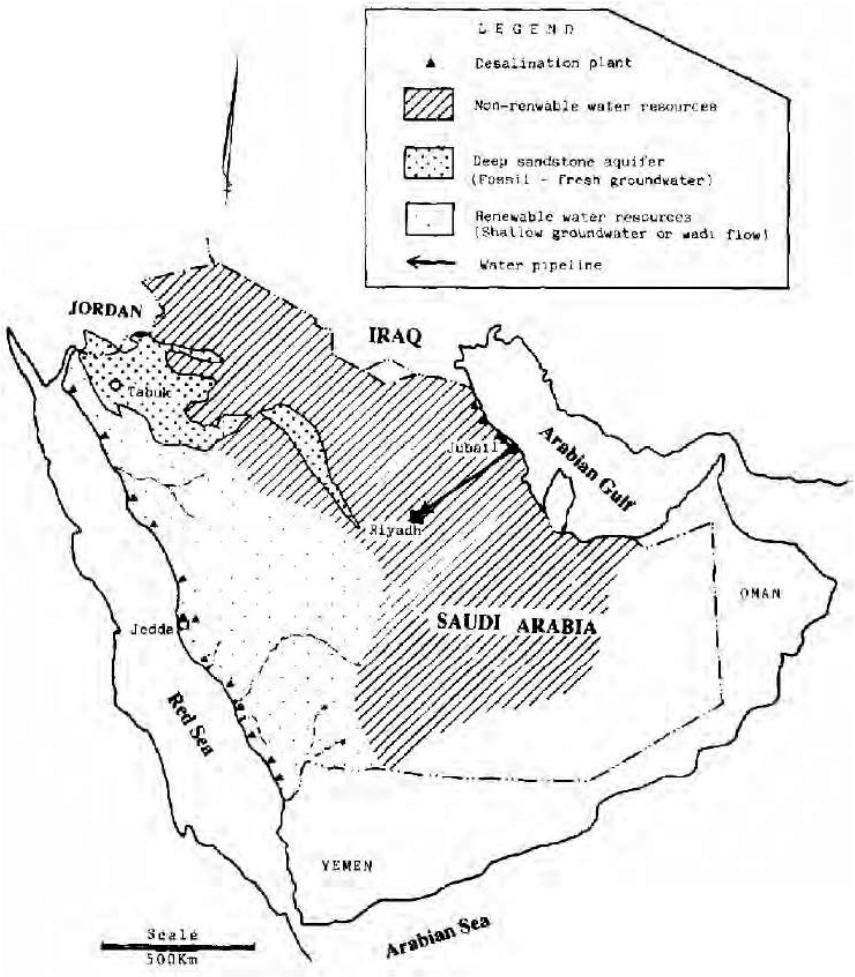


Illustration 14: Water resources of Saudi Arabia

In the case of Israel, the issue is more complex: the Jewish

State – always in the forefront of exploitation-techniques, due to its obviously scarce water resources – is using both desalinated sea water and water from mountain areas, managed in the interest of all the Palestinian region, as a result of a complex treaty and a long dispute. As a result, however, the Jordan River substantially decreases its flow while crossing the Israeli territory, and sorne people foresee that the Galilee Sea could dry up by 2050[18].

Israel's prohibition of wheat irrigation has promoted the "water war" with Palestinians to one of the key causes of conflicts between the two populations. Within a very complex military situation - endangering its own very survival - the Jewish State could become a net importer of agricultural products, diverting resources from defense and security[19]. The country's response to the issue has been an increase of investments in desalination plants, what is relevance, however, has not yet allowed Israel to achieve total water autonomy[20].

Illustration 15: Water Resources of Israel/Palestine and Water Utilization along the Jordan River

The issue does not change in the Maghreb region or in the rest of Africa. Morocco and Egypt have less than 1,000 cubic metres of water per inhabitant, while Algeria, Tunisia and Libya have 500 cubic metres per inhabitant; and the water stress affects also Rwanda, Kenya and Nigeria[21].

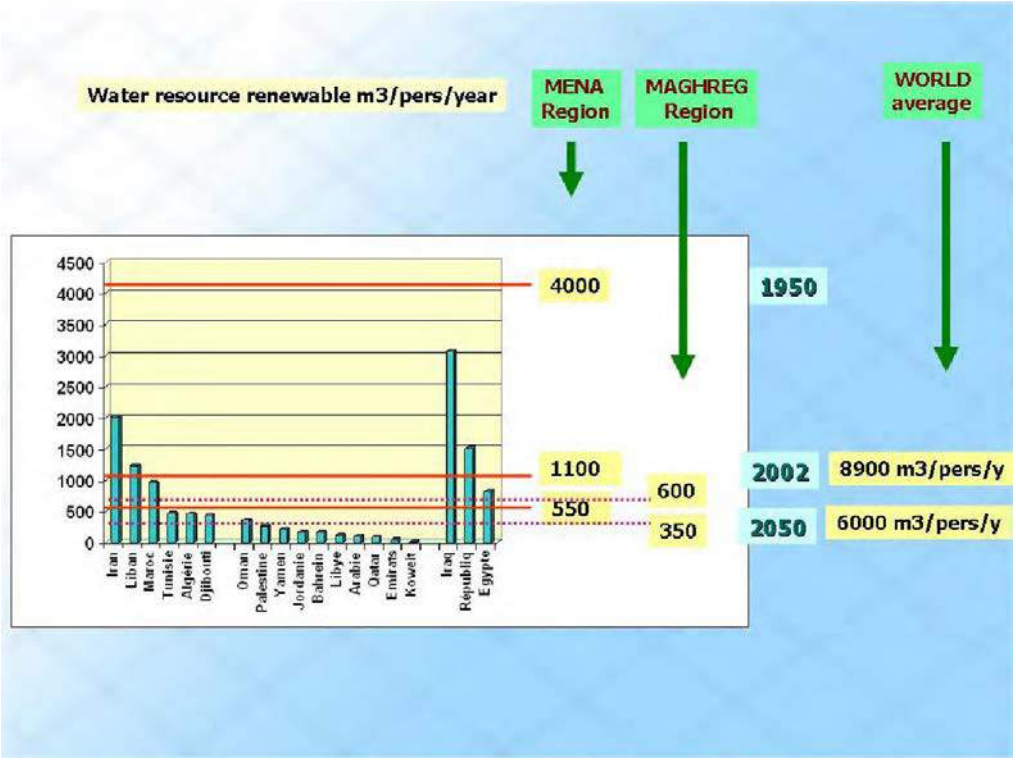


Illustration 16: Water resource renewable m3/person/year

Geopolitical and geo-economic consequences of the described developments are self- evident:

1) The worldwide arbitration of produce will shift to countries - such as Saudi Arabia, Korea and Japan - which will try to replicate the oil model, applied to international bargaining after the Yom Kippur war;

2) The economic and financial crisis will prevent the U.S.A and the E.U. from making an equivalent countermove in the most agriculturally "virgin" regions in Africa and Asia;

3) Food prices will tend to increase for western countries and will represent an important economic *leverage;*

4) The agricultural expansion of Saudi Arabia and its emulators will be followed by a strategic colonization, certainly out of line with western *Global Strategy* goals.

Illustration 17: Foreign Land Acquisitions

However, the agricultural expansion of Korean, Saudi, Japanese and Chinese sovereign funds is very likely to suffer setbacks, due to the market-oriented productions implemented and to insufficient water availability. Crops, typical of these *market-oriented* productions, are very water-intensive growths: the trend will be towards technological transformation, i.e. genetic manipulation, that will be reflected by price increases and that will not stop the progressive decrease of soil productivity. At higher price levels the market is likely to shrink, decreasing the sustainability of the wages of farm labourers in rural areas, potentially

jeopardizing local social stability, and triggering strategic, military and geopolitical consequences.

Today's average stored grain reserves equal 50 days of market demand - half the quantity usual in the past - due to the substitution of physical storage with speculative financial instruments. Food shortage, caused by the mix of water scarcity and speculative liquidity on the global market of *commodities,* is predicted to be far more severe than the food crisis which hit the Russian Federation in 1972-1975, when food prices rose on average by 72%[22].

Grain prices and the price of all other *water dependent* products are based on the U.S. benchmark. The U.S. market covers more than 60% of world corn[23], ranking third on the soy market, after Argentina and Brazil[24]. The knowledge of internal mechanisms of the North American market is therefore essential to understand the link between agricultural prices and the water system: the dollar depreciation, the expansion of bio-fuels, the management of highly securitized markets are, by their nature, characterized by *short-termism*: hence, the Mexican *Tortilla crises* of early 2007[25] and the more than 18 bread riots in various Asian and Arab countries. In the same period, the rice price in Asia increased by 150%[26].

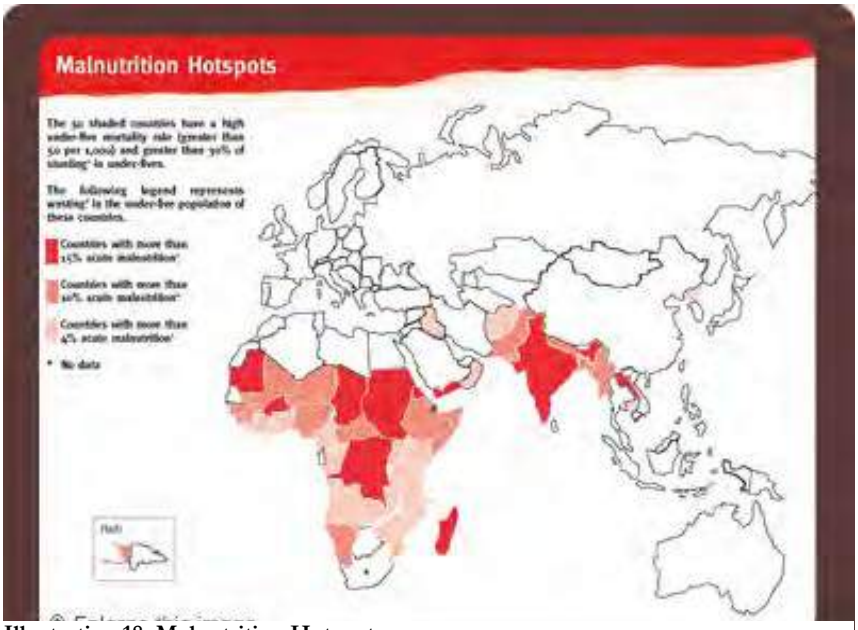


Illustration 18: Malnutrition Hotspots

The sustainability of a satisfactory level of agricultural production has been generally pursued applying a standard cluster of solutions:

1) Establish a network of sea water desalination plants of sufficient size. However, the environmental cost of this operation - not to mention the economic cost - would be such as to *de facto* exclude a number of countries from access to this technology;

2) Establish a balance between human use of water and agricultural production. This is likely to lead to a substantial increase of prices, in view of the fact, that there is a structural scarcity of agricultural food products;

3) Stop hydroelectric development and industrial developments (currently there are 45,000 dams all over the world), in order to allow agriculture – the primary economy – to reuse the water share devoted to the manufacturing companies operating in the non-food sector.

Achieving solution n.1) would increase the debt related to investments in the water sector, which could result to be not sustainable by already indebted countries, not only in the third world.

Implementing the solution n.2), the subsequent price increase would hit not only the richer western societies, but also the poorer populations of the third world.

Solution n.3) implies an uncontrollable increase of oil prices, subtracting financial resources from their agricultural and water-related destination.

A dilemma which is hard to resolve.

Hence, there is no stable and rational solution for managing the imbalanced relationship between water and land, i.e. Between *earth* and *sea* - just to use Carl Schmitt's political and esoteric categories. Whilst it is partially true that subsidized agricultural economies send anomalous

and distorted signals to the market – the financial one, in particular – it is equally true, that agricultural and water management activities have rates of invested capital remuneration, which often don't match the contemporary financial *swarm* pace and growth rates. Therefore, with a view to solving - at least partially - the tensions between food and water, three courses of action should be followed:

a) The expansion of water recycling techniques at local level;

b) The definition of a price system, independent from the one single producing country, which happens to supply globally the currency for transactions;

c) The management of criteria to parcel out rural properties in the third world, directed at avoiding soil overexploitation practices - applied for the short-term-return on invested capital - and at guaranteeing economic viability[27];

d) A controlled liberalization of the world market, directed at avoiding dependence on the large end user markets – namely, India and China - and allowing the differentiation of agricultural supply and hence the management of the water needed to produce it;

e) A different management of agricultural produce transportation prices, in order to prevent the spill-over of oil price increases to food and water prices, with the subsequent multiplying effects.

Illustration 19: Giancarlo Elia Valori;

Chapter 3: Climate change, green economy and price volatility

According to the United Nations and all its agencies and "sister" organizations, the key link between water availability, its safety and distribution in the least developed countries lies in the connection of *climate change with land productivity and urbanization.* The most probable scenario emerging from all studies is the increase of temperature – the decline of global water resources – the increase of irrigation needs – the decrease of rainfall – the structural crisis of water and hence of food.

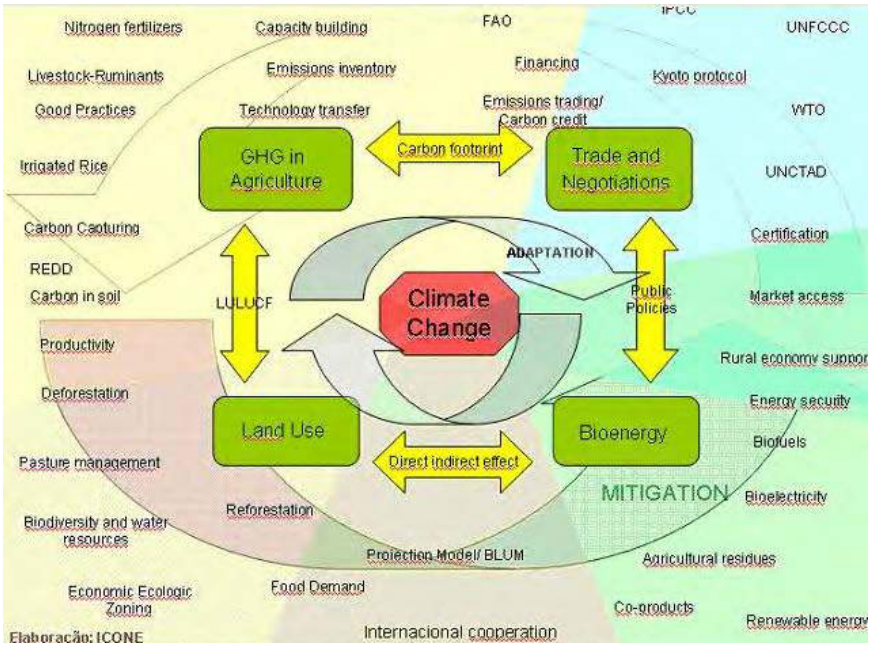


Illustration 20: Climate Change Effects

Climate change links the survival of the urban world to the one of agricultural activities which, after all, nourish the "world cities", as Lin Biao called them[28]. *Global warming*, which is at the core of all U.N. agencies' analyses, is supposed to generate, by 2025, twice the water requirement for irrigation than in its absence. The F.A.O. envisages therefore open competition for ever scarcer water resources between agriculture and environment. The effects of *climate change* on agriculture, which accounts for 14% of the yearly greenhouse gas emissions, have been widely studied and subsequently indicted of a number of

consequences:

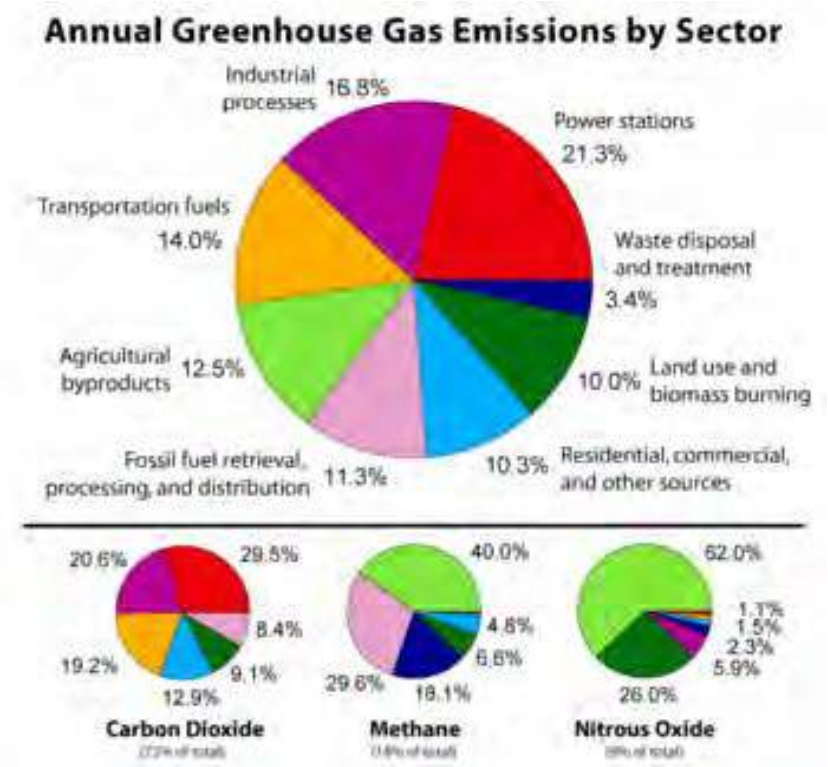


Illustration 21: Annual Greenhouse Gas Emissions by Sector

- Temperature will increase every year by roughly 1°C, directly affecting the growth pace of the plants suitable for human nutrition; the sea level will increase by 10-15 centimeters, causing soil salinization on larger coastal areas. An increase of wind speed will also be recorded, which will give rise to greater soil erosion. Fertile agricultural areas shall move northwards; higher CO2 emissions will improve the photosynthesis.

- Species of cereals and produce, more suitable for the new Darwinian environment, shall be selected. The production of fruit and vegetable, which are the most water-dependent, will decrease, as a result of the abrupt fall of water available for irrigation[29]. According to the F.A.O., only 20% of

> world agricultural land is irrigated underground, which implies a more severe and destructive impact on the poorest areas and a less significant one for those areas practicing an agriculture less dependent on *rainfall*[30].

The final result will be a different distribution of fertile agricultural land, which will determine winners and losers in the forthcoming "food war".

In this context, the United Nations assume that the solution lies in the adoption of the *green economy* by the countries of the "North of the World". The "green economy" issue is particularly complex and would deserve an in-depth analysis. In contemporary theory, the *green economy* is a system changing the goals of the whole productive system - which shift from quantity to quality - and of the State, which is no longer the mediator of class struggles, but plays the role of manager of the new economic goals. Such a development fits within the project of the *post-industrial society,* which emerged at the end of the *cold war*[31] and was strengthened when Western societies found themselves weakly facing the OPEC oil cartel, that the Arab world managed with geopolitical and strategic criteria[32]. The new password became low consumption of renewable and non-renewable energy; investment in innovation-intensive technologies, i.e. high value-added products; *decrease* of the old State and of the far older *labor-intensive* Western society; specialization in the knowledge-based economy[33]. The reality, however, has been the decrease of the share of investment in "smart" technologies in the western world: in Europe, the whole Union has clearly failed to invent new products and technologies; the United States managed higher investment in *knowledge technologies* from 1990 to 2002; Japan followed hot on their heels; Europe ranked third with Italy, Belgium, Germany and Austria below the E.U. average and France, Great Britain, Sweden, Denmark and Finland above the E.U. average[34]. At geopolitical level, the "knowledge-based economy" squeezed the labor force, expelling the one that could not be readapted to the new functions; at the same time it requested capital investments that were already in short supply in Europe, within the framework of unbalanced public budgets, due to welfare spending.

On a global competitive level, the *post-industrial society* had no

technological or strategic barriers to entry: India, China, the future Russian Federation and even some countries of peripheral Asia could play the same game as the West, who could certainly not prevent – as it had done in the XIX century – the export of technologies and the establishment of optimal markets of raw materials outside its sphere of influence[35]. The *smarter* the technology, the more reproducible its related industrial process. It sufficed – as happened to the Franciscan friar evangelizing China – to bring inside his own walking stick a colony of silkworms, the export of which was forbidden in imperial China. Maintaining a huge welfare, managing a political class with an uncontrollable spending power, fostering – often for "social" reasons – the large and now insolvent companies, destabilizing élite universities and research centres for what Pareto called the *democratic greasing* – all these factors were the lead in the wings, which prevented the E.U. member States (and, to some extents, the United States themselves) to jump on the bandwagon of the *knowledge society,* that China at first and India, at a later stage, funded with a global substitution economy - at unbeatable production costs - of the goods that the West "did not want to produce any longer" or thought had no acceptable profitability margins[36]. Hence, the "knowledge society" is a theology of reduced growth, under the worst demographic, financial, commercial, cultural and technological terms and conditions that the West could imagine, after conceiving a society characterized by full energy saving – another economic theology devised after the 1973 Yom Kippur war[37].

The same scenario is emerging for water: widespread scarcity (and in this case well beyond the oil region countries), financial management of comparative scarcity, local funds, *de facto* support to national "cliques" (gangs) that use a very significant share of transfer liquidity from "rich" to "poor" countries to maintain themselves in power[38].

From the water management viewpoint, the United Nations indicate, that investing 0.16% of the world GDP in the water sector (indeed, how can the calculate the world GDP? As a percentage of major national economies[39]?) could "limit" water scarcity and increase (figures are not available in this regard) the access to drinking water for a large number of Third World populations. According to UNEP – and this is a significant datum – the water crisis costs about 2% of the yearly GDP of

the Philippines, Cambodia and Indonesia[40]. This means, however, that if we consider their average unit labor cost and the cost for water purification and the health improvement of the labor force, the latter will always be higher than the average labor exploitation rate. Investment in ecosystems, which is certainly ever more necessary, has a high initial cost and a weak and distant return[41] hence it needs public support (which, in a zero-sum State budget, means "shifts" from other budget items) and costs for the late readjustment of the productive systems, which are also costs.

The link that the United Nations see – and we think that it is correct from the analytical viewpoint - is the one between *energy* and *water management*. If the industrial water demand increases, mainly thanks to the Chinese and Indian booming economies, the water "class struggle" will take place between companies, which will have to manage a strong water demand, and populations, who need water for nourishing and washing purposes[42].

The United Nations think that if we applied the "green investment" model (the optimal level envisaged by the U.N. is equal to 1.9 trillion U.S. dollars per year, with a view to avoiding the "environmental disaster"[43]), within 2025 we could reach the specific *Millennium goal* of "reducing" (no reference is made to how much and where) the number of people without access to drinking water and of using the banks of the "rescued" rivers to create jobs in the "service sector" - a real obsession for contemporary economists. The idea that human beings do not modify nature any longer - as Hegel and Adam Smith taught - although with a new environmental awareness, and confine themselves to a "service" economy is one of the most widespread and dangerous myth in contemporary world.

The other major concern related to the global water and food issue, is the *volatility of agricultural prices*. Food prices have been stable until 2005 and increased significantly in 2008: by 3.2 times those of basic rice; by 2.1 times those of wheat and by 2.5 times those of corn[44] (these being the reasons for the "bread rebellions", which triggered off the Arab spring, within a framework of absolute political and financial stiffness of the old local élites). The uncertainty and unpredictability

stemming from *climate change* and from the *global water crisis* render the food market structurally speculative and stimulate the "animal spirits" of short-term world speculation.

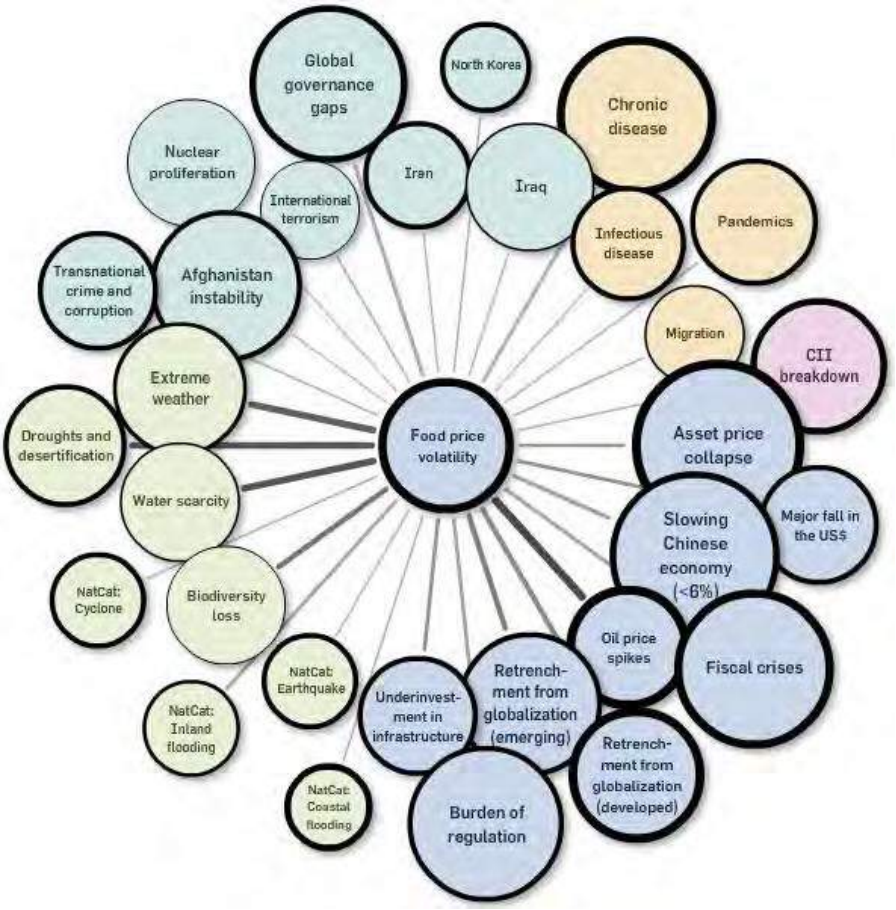


Illustration 22: Food Price Volatility

Obviously *price volatility* is not only a function of quantity fluctuations, but also of the related *costs*: *tariffs, water management systems and their cost structure*[45]. According to a survey performed on 271 major cities worldwide, the units costs of urban water increased by 6.8% in 2010,

the last year for which global data were available; the average cost per cubic meter has been $2.03; the cost for collecting and disposing waste water has increased by 155%[46]. With some exceptions (Tbilisi and Dublin, where water is still free) the average cost for managing and treating waste water appears to be *no longer affordable for most urban people, especially in the poor cities of the Third World and in expanding megalopolises, such as Mexico City*. Poorer people pay more for water than people living in the western world: this has consequences on health, standard of living and purchasing power of marginal classes, which are reflected on the average life expectancy. It has been scientifically proven, that the real "leap forward" of the average life expectancy in Western Europe has been recorded once drinking water has been available in all urban and peripheral areas. It is estimated – and obviously figures are generic considering the inaccuracy of world statistics - that the reduction of life expectancy is caused by the increase of severe and disabling diseases and to a wider spreading of infectious diseases generated by the lack of drinking water. In those regions where the scarcity of drinking water has been caused by the unaffordable cost structure, life expectancy recorded a decrease by 14%, compared to previous conditions of comparative abundance of water resources. Currently, about 1,1 billion of human beings have scarce access to good quality water; 2.6 billion people have scarce or no access to basic healthcare. The blend of these conditions, mainly originated by water scarcity, could lead to a difficult, if not impossible, agricultural rationalization of Third World's land - namely, the less exploited land, best suited to intensive cultivation – and, hence, to a snowball effect: high water prices; subsequent social impact; even higher food prices in Third World countries, followed by those in First World countries[47]. In the future we may record "bread riots" at global level, especially in those areas where the expansion of water-rich agricultural activities is a vital development. Also industry-rich areas of the First World, that, for a number of reasons, cannot afford such expansions, will be involved in this process. This is the case of China. Every year 1.8 million children die of diarrhea, caused by drinking water conditions; besides evident moral aspects, this will contribute to the quick ageing of the population, and to a proportional diminishment of the active manpower.

Other speculative factors include:

- The expected expansion of urbanization, which will

generate an increase of the produce's unit value;

- The production of *biofuel,* whose price is set by world markets of the OPEC- *dependent* system[48], operating, however, on substantially lower fuel production prices (professional sources report that in 2020 global biodiesel production will amount to 45,291 million liters; the European Union will be the primary market absorbing 48.1% of world production - mainly originating from Brazil and Argentina -, while the Asian-Pacific share will increase by 4.4%).
- The diversification of speculative investment funds in the food and water sector, which depends from their short-term positions on other investment markets.

It is necessary to briefly describe the perverted effects of financial speculation on securitized food and water markets. Banks – also thanks to "enlightened" international organizations ("enlightened" in B. Croce's meaning of the word) - grant contracts (*future contract*[49]) to food producers for the sale of their produce at a pre-set price at a future date. However, if the market turns into an oligopoly (as a consequences of its intrinsic nature) – not only limited to information, as V. Pareto defined it – traders act irrespective of the real variability of the product's availability at the end of the "future" contract, generating *purely speculative future contracts*, more similar to gambling bets, than to trading insurances. The consequence is, that when *the prices of future contracts rise, the prices of real products follow closely*. Between 2006 and 2011, the merely speculative share of *food* (and *biofuel)* markets rose from 65 million to 126 million U.S. dollar[50], while U.N. statistics recorded, that 44 million farmers were relegated to extreme poverty, as the result of the deterioration of the *short selling* speculation on food *futures*. This appears as an updated edition of the "hydraulic empires", that Karl August von Wittfogel, the German anthropologist and economist converted to sinology, studied as characteristics of the "Asiatic mode of production"[51]. The effects are now well-known also in the Middle East: 13% of inflation on food price in Syria in 2011; 26% of growth, *rebus sic stantibus,* of food prices in Iran, namely twice the inflation rate; 15% of inflation of food prices in Indonesia in 2011; an increase of "*new poors*" by more than 3.5 million in Pakistan, as a result of the very sharp increase of bread and food commodity prices[52].

Nature plays a role on its own: two million square meters of Russian cereal crops were destroyed in the summer of 2010; prices doubled and raised the expectations of short- terms speculators on medium-term securities linked to the Russian and former Soviet region's cereals. Current European productions, France's and Germany's in particular, are expected to be 15-20% lower than originally projected, generating a wheat price increase of 98%; meat and sugar prices are expected to rise by 48% and by 32%, respectively, while, according to global market forecasts, rice prices will surge by 33%[53].

Illustration 23: Simon Peres; Giancarlo Elia Valori

Chapter 4: The inadequacy of traditional economic theories

The United Nations rightly think, that water scarcity doesn't follow a Malthusian model, namely a mere linear link between scarcity of resources and comparative overpopulation[54]. The mechanism linking water availability, the growth and health level of the population, its density and its ability to become productive, is *historical*: *overpopulation* does not exist, in abstract terms; there is no *absolute average availability of water resources* and, in principle, *prices* are structurally *independent from market* mechanisms. Quoting John Maynard Keynes, markets are efficient in setting prices, only in the presence of a real alternative: this is hardly the case of water resources, even in the western countries (where the unit prices of drinking water have increased more). This is the main reason why the strategies to privatize the water cycle[55], already well-widespread even in the Third World, are irrational: multinational companies implementing them have a "fixed grid cost", which does not depend on the number of possible connected customers[56], and a fixed maintenance cost, which does not depend on the number of grid subscribers. Therefore, if a return on investment (ROI) is sought, and the criteria taught in all Business Schools are applied, tariffs would have to be set at levels, which will deflate consumption by affluent customers and wipe out the share by poorer ones. This not only prevents the cost-effective use of plants, but induces the structural increase of production costs and of pension and health insurances, since labor and agricultural and industrial production unit costs increase more than proportionally to water prices.

The World Bank's policy to privatize waterworks in Latin America started in 2002 within the "structural adjustment" policies, that the financial organization had imposed on those countries: the result have been riots, a further closure of the internal markets and, hence, the indirect need for greater "structural adjustments" from abroad, which, under conditions of financial resources scarcity also for the First World countries, have been destructive for both parties[57]. Maybe, the after-war proposal of the Italian liberal and free-trade economist, E. Rossi, of establishing a real "parallel socialist economy" for basic commodities, should be reconsidered. The proposal envisaged that commodities would have been distributed by the State, at very low unit costs, to allow

the creation of the "labor army" capable of setting into motion the Italian economy, destroyed in the aftermath of the Second World War[58].

However, a clear differentiation needs to be made between *enabling* people to have the *possibility* and the *ability* to work, and *deceive* unemployed people with - surreptitiously paid - "fake work" at subsidized factories. This has often be the case, when water multinationals abandoned insufficiently *profitable* investments, forcing governments to step in, allocating further funds to water management and setting fixed ceilings for tariffs. Needless to say, this is *a cost,* and in this regard, the neoliberal theories are perfectly right[59]. Governments transfer resources from other budget items - possibly equally useful - to water management, subjected to price control. It is worth wile to recall, that damages caused by the insufficient availability of drinking water and water for agricultural uses *is suffered* by people in terms of life expectancy, diseases, adaptation to work, sharing of roles and tasks within families, demographic development and sustainability of young people's health.

After the financial crises of the early 1990s, and particularly after the yet unresolved recent crisis started by the U.S. *subprime* bubble, even developed countries can no longer afford the costs of water distribution at real prices: if not subsidized, tariffs are set at variable cost levels. No contingency is provided within the tariffs' structure to take account of the costs for the adaptation, renewal or even expansion of infrastructures for water purification and distribution. Hence the calculation of outlay costs turns into a useless exercise of actuarial mathematics and statistics. Multinationals, structured to manage products, whose standardization is directed at achieving the highest value-added, don't succeed in optimizing their tariffs and in reaching all prospective customers, clinched between the necessity to distribute dividends – and therefore, eventually, minimize investment – and the need to stay "liquid" - obviously in the financial sense - and solvent towards stakeholders. The financial resources that neoliberal governments granted to water multinationals at the beginning of their venture in Latin America and Africa, fell flat and turned into grants for the wealthier part of the world[60]. This has been particularly true in Africa, where water privatization has been going hand in hand with the industrialization of agriculture for the export to First World

countries. Nestlé, for example, owns 67 factories for the bottling of beverages it sells in 130 countries. Water used in such medium value-added activities cannibalizes the use of water for local people's life habits, deprives agricultural activities and mass health management[61].

On the other hand, international aid has not been effective: it is worth noting, that the tracking of the actual destination of funds to developing countries is low in U.N.'s agenda[52]: this is the reason for the low effectiveness of international aid to the economy and the agriculture of the "South of the World". In particular, it does not allow an environmentally friendly and sustainable agriculture - falling within the framework of the *Millennium Goals* – and, at a sociological level, the creation of a stable middle class, avoiding the political polarization of Latin American, African and Asian countries, which have been flooded by the U.N. Millennium funds and projects. Currently, and even more so in the future, the problem lies in the fact that *the greater the availability of financial resources in "Third World countries", the greater the internal social polarization and the expansion of grey and black economy in the local fabric*[63].

Hence, we are recording further proletarianization – namely the progressive fall of wages, which have already reached the level just above the poverty line - in underdeveloped countries: the prerequisite for "bowl dictatorship", for the correlated "politicization" of the labour market and for the link between social and political representation[64].

The illegal management of funds, particularly in the African public health sector, has reached extraordinary levels: about 38% of U.N. funds allocated to the *Millennium Goals* are managed by corrupt politicians for their own personal needs and for political or family cronysm and *patronage* purposes[65]. The political complexion of many third world nations benefiting from international aid is no longer the one which was originally conceived by the United Nations. In early 1990s it was thought that the "Third Wave"[66] of global democracy would positively change marginal economic areas, but today analysts often speak about countries under a stable condition of "no-war-no-peace"[67]. Past experiences in Kosovo, Somalia and the Lebanon taught us, that the rationale of the U.N. "interposition operations" crystallizes conflicts and creates political classes of *rentiers,* by means of international aid. The

latter often turns into the financial tool for the new rulers' definitive shift towards economic illegality[68].

This strategic and political paradigm implies that, besides and because of corruption, the *dual use* of U.N. funds - peace and war – should be considered.

These developments are bound to worsen the global water scarcity in the future, in particular considering that Third World countries will have to provide water also for First World countries, which are quickly exploiting their traditionally scarce water resources: according to the United Nations, within 2025 two thirds of the globe will be water-scarce.

Illustration 24: Shimon Peres; Giancarlo Elia Valori

CHAPTER 5: Who owns water? An historical perspective

The issue is certainly legal, but also geopolitical and historical[69]. The first economic (and cultural) integration of Western Europe occurred along the roads connecting a *waterway*, the *Silk Road,* to the center of Italy, to Toulouse and the Flanders[70]: an economic system which, through the Northern waterways, reduced the transfer costs and allowed the "economic revolution of the Middle Ages" and the cultural transformation leading from Humanism to Renaissance and - particularly in Northern Europe - to the religious crisis resulting in the Reform. When the Atlantic Ocean became a waterway for humanity, the economy of the Italian city-states shrank, due to its high prices, justified by the traditional quality levels, and to the corporatist protection of productive technologies. Flanders and the Toulouse region – which had been at the origin of Florentine and Sienese trade[71] - , instead, drastically reduced production costs, by directly accessing the new waterway and creating a world market focused on Europe.

Let us revert, however, to legislation, without forgetting that – as was maintained in the old Italian law faculties, "law is already old when it is enacted" and that rules and regulations are the result of history, economy, culture, values and - *lato sensu* - religious expectations of a nation. These considerations highlight the link between cultural identity and economic system: only in recent years – and this is, undoubtedly, a crisis symptom - do we recognize, that, what unites people - the Romans' *religion* - can only be a sequence of positive rules.

In the last decade, 175 severe floods have taken place in Europe. Many E.U. member States and the Swiss Confederation have agreed to the joint management of water basins and of the environmental protection of water courses, balancing and integrating extremely complex and diverse issues. At geopolitical level, E.U. rules and regulations are a successful integration model for environmental protection and for the management of cross-border conflicts on the ownership of water basins, whose compensative system could be used also in other regions of the planet. It is also a model for the optimal and non-protectionist use of waterways for commercial purposes - especially in Central Europe -, as well as for the control of pollution, often caused by

chemical fertilizers and nutrients for massive animal husbandry. Finally it is model for the tackling of a further essential issue: the relationship between underground water resources and the distribution of water for human uses[72].

In the Russian Federation, the legal and cultural focus of water legislation is on its use for human and health needs, on the federal or local governments'/citizens' ownership of primary water resources, and on the centralized management of any water-concession to private entities. Such a restrictive and protectionist setting is the consequence of the substantial asymmetry of Russian water resources, largely present in less populated areas and, conversely, structurally lacking in the most densely populated ones. It is also the mandatory measure for the reclamation, in the public interest, of major water basins, often polluted beyond limits both by Stalin's forced industrialization – largely financed by the forced *surplus* generated in the "socialized" rural areas - and by Khrushchev's "thaw" project to "overcome the United States by 2000"[73]. While the E.U. has reached an acceptable "geo-hydraulic" equilibrium - which balances needs and protection, ownership and commercial use of waterways - Russia is *de facto* forced to implement a water policy dating back to the old Soviet statism: transfer excess water from areas where it abounds to those where it is scarce and purify it from the pollution caused by the quick and often irrational – in spite of all planning performed – agricultural and industrial growth[74].

Since the 1950s, International Laws on Water have consolidated norms and procedures previously limited to well-defined areas, such as the Indus, Jordan and Columbia rivers. The first set of global rules, proposed at the 1966 Helsinki Conference, asserted an initial, very valuable and innovative legal principle: the obligation to resort to international negotiations, when a single nation fails to adopt environmental regulations in line with international standards and rules. The other legal and political concept affirmed, is the one of *equitable consumption,* which has appeared in international water regulations since the 1970s and has become the core of them[75].

Regulations regarding the Amazon river are the most interesting ones in terms of legal innovation and of geopolitical and economic impact, considering the importance of the area for Brazil's development,

its relevance for the whole planet's environment and the potentially destructive effect of local activities for the ecosystem: mining for precious minerals, deforestation for the wood industry and drilling for oil extraction. Federal regulations are based on the National Water Law no. 9433 of 1997, which expresses the national interest of protecting and expanding the hydroelectric sector. Three years later the National Water Authority has been established, with the responsibility over all domestic and cross-border water resources. The law states that water ownership is only public and that, in case of water shortage, priority must be given to human and health uses, while the *multiple use of water resources,* namely the fair distribution of water among its various uses, is mandatory. This means that it is forbidden, also for the State, to have a *de facto monopoly* on the management of resources. Users' Committees have also been created since 1993: in particular the Local River Committees.

The World Bank contributes substantial funds to the protection of the Amazon River from the *global warming* effects, while the Inter-American Development Bank has funded the whole Brazilian Water Plan, focused on sustainable development projects[76]. Once again, from the geopolitical and strategic viewpoints, Brazil's regulations try, with some difficulty, to incorporate three different intervention lines:

> 1. Human and animal husbandry uses, which are of primary importance for the management of the consequences of the strong fluctuations characterizing the water cycle in the North Eastern areas and in the Amazon internal regions. The lack of political and security control could have led to agitate phenomena or to the inclusion of the water system into the illegal economy. The sustainable availability of water has resulted of paramount importance to support the economic growth of the major sectors allowing the country's current economic *boom*: timber production, hydroelectricity, intensive agriculture for energy production. Another collateral element has been transportation, which is essential for the relationship between central and peripheral areas of the Brazilian system[77].

Once the economic *boom* will come to an end, however, Brazil will be short of capital for the necessary upgrading of its water

system, considering that international cooperation and development banks will be less generous to the country. The issue regards also Colombia and Peru, both connected to the Amazon river system.

Colombia's policy is based on the power of local water authorities, divided into 33 regional institutions. The system has been built around the Regional Authority of Cauca, modelled after Roosevelt's *Tennessee Valley Authority* of 1933, which tackled specific issues regarding the State public intervention as they had been conceived – during the 1929

Great Depression - by the Italian Fascism, particularly with IRI (the Institute for Industrial Reconstruction, which was the umbrella organization for State-owned companies)[78]. Subsequently Colombia consolidated regional regulations in a framework known as "Code of Natural Resources" of 1974, which foreshadowed State *responsibility* (not ownership) for water quality and protection. The principle migrated in the 1991 Constitution, where public obligations for environmental – and hence water - protection were enshrined extensively, as well in Law 99 of 1993, which established the Environmental Ministry, which has power also on the Colombian water system[77]. Decentralized management of water cycles with strong fluctuations, balance between agricultural and human uses, government primary interest in developing water energy and oil primary replacement: once again, a very hard regulatory balance between potential fault lines.

Peru is in a situation of natural water asymmetry. 98% of its drinking water is available east of the Andes, in the Amazon region. Hence, about 60% of people receive 1.9% of the water resources available. The *Ley de Recursos Hydricos* (Water Resources Law) of May 31, 2009 strengthened ANA, the water national structure whose management regards both the assessment of the water impact of national glaciers and their "retreat" and the wide series of desalination projects[80], using the international development banks' funds.

In general terms, geopolitically weak countries find themselves in three recurring conditions[81] with reference to water resources:

a) With a fragile equilibrium, allowing relative water

autonomy, as is the case in most Latin American countries;

b) With a structural dependence from water, very similar to the one of Western countries in relation to oil;

c) With structural water scarcity, which changes - also in an invisible way - the development equation of any country, by they suppliers and acquirers of water resources.

With a view to understanding this issue, it is worth assessing the situation related to the Nile. Egypt has its own survival at play along this river axis:

1) Its security relationship with the Horn of Africa, which is essential to protect the routes to enter the Suez Canal and, hence, to manage Egypt's global role;

2) The management of the water cycle of its agricultural production, which is essential both for its survival as State and its political stability;

3) The protection of its leadership role in the Arab world and the Mediterranean, which mainly results from Egypt's ability to manage the Sinai "coverage" of the continuity between the Maghreb and Mashrek regions, and the armed peace between Israel and the Arab world.

In the 1990s the Egyptian regime developed two new water projects:

a) The Toschka project in the Nile Western delta, which started in 1997 and was mainly used to supply the growing Egyptian population with drinking water;

b) the Northern Sinai project;

In both cases, the goal has been to reuse irrigation water and, in particular, the optimal management of Nile water for "new land"[82].

For Egypt the problem is and will be to manage the relationship

between the water needs of a growing population and the need to support the growth of the agricultural sector, which is essential to Egypt both for supporting its population and, particularly, for avoiding financial dependence for food commodities from world-markets in an context of scarce and now securitized resources[83]. The policy implemented by President Mubarak, before his ousting, is fairly clear and very "Nasser-style": Egypt has the right to manage all water resources to support its growth and, if the other river countries sign an agreement without Egypt, it will not take it into account[84]. In particular, the issue regarded the 1959 agreement between Egypt and Sudan which granted to the former a significant share of water resources compared to the other Nile countries, such as Sudan, Ethiopia, Tanzania, Kenya and the Democratic Republic of Congo, which want more water from the Nile.

From the strategic viewpoint, if Egypt accepts a settlement agreement with its South, it will become weak and will be subjected to Central Africa's penetration, while if it keeps on managing its leadership on Nile waters, it will be in a position to focus all its defense and attack potential on the Suez Canal[85]. But obviously the Egyptian water issue reminds of the tension between Israel, the PNA and Jordan for the River Jordan. An issue which, to some extents, is historically one of the Middle East crisis factors. The Palestinians ask for access to the water resources of the Gaza coastal system and to the river in which Jesus was baptized, besides full access to the mountain resources at the Syrian-Israeli borders. The Palestinian demands total 400 million cubic meters per year from the Syrian system, 100 million cubic meters per year from the Coastal Aquifer and 200 million cubic meters per year from the River Jordan[86]. It is worth recalling that the 1994 Oslo agreement transferred the control and management of Gaza's water resources to the Palestinian Authority, and in 2005 also the water resources of the Israeli regions were transferred to the Palestinian Authority. A pipeline was supposed to ensure consumption continuity in Gaza thanks to the Jewish State. The Joint Water Commission, operating since the 1995 Oslo second agreement, managed the opening of some wells whereas, after the 1995 Interim Agreement and the Taba agreements, the Palestinian water networks were transferred to the Palestinian Authority, while the networks used both by the Palestinians and the Israelis still fall under the Israeli authorities' competence.

The growth of Palestinians' water consumption in the region is a clear sign of the demographic developments of the area and of the anarchic management of water sourcing and distribution, both for domestic consumption and for agricultural uses. A "shadow economy" which cannot be surveyed nor measured even through its main indicator, namely water consumption.

In relation to the Mountain Aquifer which, indeed, is related to three autonomous sources, the political issue regards Syria, Jordan and the PNA Territories. Also in this case, the management of wells is rather casual, in spite of the JWC authority. The solution, however, lies not only in the reformulation of the Oslo II agreements, but also in international cooperation for the efficient and rational use of water resources. At legal level - which, after all, already envisages it widely - the issue lies

i) In supporting environmental-friendly water management which is something far different from the uncontrolled exploitation of wells;

ii) In the correlation between "advanced" agriculture and rational water exploitation – which, in turn, is something far different from the "Fordist" industrialization of world rural areas, as is happening with the *land grabbing process* under way in Africa and Asia[87];

iii) In "subsistence agriculture", this is also water costly.

The creation of a new form of water and agriculture proprietary management, well beyond corporate priapism and the useless tendency to self-consumption, will be an interesting challenge facing the next generations in the near future.

Illustration 25: Ban Ki Moon; Giancarlo Elia Valori

Chapter 6: Water. Rights or commodity?

The question is, whether water is a *Right* or a *Commodity*. Theoretically, commodities have the same distribution costs in the whole market; they should not be immediate survival elements, but rather products which can be substituted on the market by selecting the most efficient alternative, precisely for their immediate replacement possibility. It is obvious, that, in the case of water, Adam Smith-style conditions cannot materialize, irrespective of the legal ownership title and of the possibility of determining its temporary aspect as a *Commodity,* particularly in view of the fact, that *on average public water has a lower cost than private water, with the same quality and distribution network*[88]. In a time of politics fiction and, especially, of finance fiction, we could imagine to separate the network's maintenance and management costs - as envisaged by the specific E.U. directive[89]- in order to attribute them to local, public authorities, which should operate on cost-based tariffs, calculated with the benchmark system[90], and not with the historical cost system. We can then calculate the average cost of water supply as a function of the extraction-purification costs and of taxes, and determine an average unit cost by considering, however, *that the unit cost for the maintenance and management of distribution structures decreases as water "customers" increase.* Hence, we should calculate – on a zone-by- zone basis - a *break-even point,* beyond which management costs, optimized on the basis of the maximum amount of users, can be "offloaded" on a possible discount of the water unit price. A rational tax policy envisaging the full allowing and deductibility of VAT from invoices, and particularly from the documents regarding the management and acquisition prices, would further reduce costs.

In view of the wide literature on the "water scarcity", governments should *educate to water saving.* Since the early 1980s, in the far-sighted Helvetic Confederation, TV *spots* advertised the "responsible and limited use" of water resources in a particularly lucky country from this point of view. The procedure has already been studied by several international organizations: the first step is to measure water availability all over the world to avoid Nature's - the "wicked" stepmother, as the poet Giacomo Leopardi defined it - negative surprises. Secondly, waste water needs to be managed - purified, where necessary,

from pathogenic substances (both natural and artificial ones) - and then– by combining Socialism and free-trade - *sold at a benchmark, cost-based price to farms, even accepting in-kind payments*. Such a global redistribution of resources and control of prices could be managed by free associations of citizens and users, government agencies and even volunteers' organizations or innovative market companies. Distribution networks should be designed to incorporate the minimum investments and management costs, possibly allocating them to local and community-focused water management entities at village-, neighborhood-, small rural areas-, schools- and hospitals-levels.

A coherent evolution of water international law should envisage sanctions at international level for securitized and short-termed investment operations in water networks, creating *innovative property and ownership rights of water resources,* consolidating their different nature from *Commodities*.

In fact: who owns water? From a legal point of view, it is a question which is harder to answer than it may be assumed. It is worth recalling that, in the Sicily of the 19th century, "Cosa Nostra" (the Mafia criminal syndicate) built its initial political and financial fortune, precisely by managing scarce water resources under monopoly conditions. Thanks to this mechanism, applied to an essential resource in a rural society like the Sicilian one, the Mafia was able to control both the "barons", the owners of large agricultural properties, offering financial means as a guarantee of its real power, and farmers, who had to pay economic and social prices to the Mafia water managers (typically, a certain number of unpaid working days on Mafia-owned properties or the mandatory – and detrimental – commercial brokerage of their own production).

To avoid a similar "middle class criminalization", which is characterizing drug trafficking and the one of other structurally scarce products, it is vital to identify the best strategy to tackle global water scarcity, enabling international law, humanitarian organizations, governments, private financial institutions and technologies to go well beyond the old ideologies, which appear absolutely outdated and unable to understand and manage the *paramount global issues,* we are being confronted

with[91].

Within the framework of global water management, laws define the criteria of water *appropriation*, which are intuitively decisive to define terms and conditions of investments and environmental protection. They then reconcile the unavoidable conflict between *local* and *global,* between communities, using water networks and water resources, and the right to health of individuals. The legal protection of water resources from irregular or even criminal management is therefore granted not to a generic *third party,* but rather to the whole mankind. In other sectors of international law, this aspect is less evident: suffice to think of the management of international treaties on atomic energy, which comprises a strong component of environmental risk evaluation, or the treaties on the protection of forests or certain vegetable or animal species.

Everybody is bound to use water, but not everybody must necessarily access the Amazon biodiversity or the direct protection of the nuclear umbrella. With specific reference to Europe, the issue of water law has many interacting facets. River transportation Rhine and Danube[92] areas is connected to water resources' protection for human use, to the management of agricultural waste, to the problem of transportation costs and of freedom of communication: three factors which, in E.U. law[93], merge in an exemplary way.

Since 2009 the network of the *Basin Management Plans* has been managing this mix of issues allowing the quick evolution of the overall regulations when the environmental, economic and commercial context changes. E.U. rules and regulations are a successful *mix* between local and global, while in U.N. regulations on the world water regime the conflict between the reaffirmation of abstract principles and a concrete penalty system remain unresolved[94].

Illustration 26: Giorgio Napolitano; Giancarlo Elia Valori

Chapter 7: The new limits to growth

Over the last few years, the U.N. approach to environmental, hydrogeological and food issues has been slowly changing. With specific reference to the 2015 deadline, the U.N. *Millennium Development Goals*, which apply to all its 191 member States, are an important guideline for the geo-economic evaluation and management of national resources. Within the *Millennium Goals* water politics is correlated to the reduction of infant mortality and to the improvement of maternal health, as well as to environmental sustainability[95].

To U.N.'s water organizations, the complex mix for the optimized management of Third World countries' regional water is a vital element for *economic take-off,* in accordance with the traditional model of the "green revolution", implemented in India from 1965 onwards[96]. In particular, its implementation results in an increase of land productivity, combining new seeds, modern irrigation and the massive use of fertilizers.

On the basis of the latest U.N. reports, between 1990 and 2008, the percentage of people having access to safe drinking water rose from 77% to 87%. If the world's population increase is not considered, the decrease of the amount of total available drinking water - underlined by the United Nations themselves in some other documents on this matter[97] - doesn't seem to be justified. The stable and direct correlation, unfortunately, is the one of the level of poverty in a country or region, its population increase, with the scarcity of water resources and their diversion away from human uses (which imply a high cost for purification) to agricultural uses. The reason lies in the nature of agriculture activities, that, at subsistence level, are particularly *water-dependent* and *–consuming.*

If we consider that in the future the OPEC oil system will increase its weight on old industrialized countries by 2.5% and by 8% on the emerging economies of the old Third World countries, which, in the meantime, will have overcome the Western oil share by 2013[98], we can easily imagine a simple, albeit clear, scenario:

If the geo-economy of the industrialized world is the one we

have seen so far, i.e. linked to the external management of E.U.'s and U.S.'s financial crises and to the substitution of developed countries' mature productions, developing countries will acquire the largest portion of international funds for the management and the purification of water. They will autonomously manage part of it (at least 30%, according to the calculations of international political crime experts[99]) and will create their own agricultural and industrial productive networks at artificially reduced prices, thanks to international aid, which, however, will not be reflected on world markets. If the "substitution economy" turns into a *substitution geopolitics,* as is ever more likely, following appear to be the consequences:

a) a post-Qaedist link will be established between Saudi Arabia and the Islamic economies in North Africa and the Gulf - also through Qatar and subsequently Bahrein- which will replace the U.S.A. and most E.U. countries in the management and economic integration of the Maghreb region;

b) a future link will be created between China, a regionalized Iran and the East- Mediterranean Arab areas, which will tend to exclude Europe and the United States;

c) a "critical mass" of growing economies will be created, - funded by the expanding oil and natural gas sales to newly-industrialized countries - which will generate a new global strategy of the Arab and Islamic World, looking to the black Continent and its resources, including water resources, as well as to the Central Asian system, which is potentially rich in water supply sources.

According to the World Bank which is one of the primary source of data for the United Nations themselves, the "water stress" will affect about 700 million people in 40 countries, with an economic development trend which, where materializing, will increasingly require water resources - thus no longer available for human and agricultural uses - with a substitution rate far higher than the one recorded in the first European industrial revolution (a region, which didn't show ant water sourcing problem).

At least one third of the World Bank's development projects regard funding for water extraction, management and purification. On the basis of U.N. analyses, the World Bank itself forecasts, that at least 1.8 billion people will have no access to drinking water in 2015 - a figure which clashes with U.N.'s significant projects in this sector[100].

Nevertheless, if water availability decreases (and the United Nations envisage that, in

2035, 70% of world population will live in coastal areas), the average cost for water extraction and purification will increase and this high cost will regard industrial, human uses and soil irrigation. If markets kept the same standard of demand for meat and agricultural products, a 40% increase for these products would be needed compared to the 1995 levels[101] and if water needs were related to this expansion of demand, on the basis of the techniques currently used, a 64% increase of water resources would be needed in those countries, that still show an agricultural *surplus*. Furthermore, if the pace of food production grew further, we would record a 22% increase of the deforestation rate which, obviously, would make even harder to manage water resources in developing countries' agricultural sectors. Between 2010 and 2100, the population – whose growth will stop in less developed countries only at the end of the current century - of African countries is expected to *triple,* whereas Europe, China and Australia are supposed to record a 20% reduction of their population[102]. Hence, more water will be needed where it is scarce and, in particular, where the population growth trend - that must be supported by a lively economy – will be ever more *water depending,* while the agricultural sector and population needs will be put to a hard test.

It is worth noting that water management, which now many countries organize by means of dams – is particularly expensive in terms of capital for their building and operation (experts hint to an incidence of 50%[103]) and that the environmental effects of a structural deviation of water courses could unleash such chain effects as to partly stultify the economic benefits of the agricultural use of the new land rescued from drought.

Hence, we record a series of *limits to growth*[104] which, this time,

do not regard the old industrialized Western world, but the Third World which is experiencing an economic take-off. In political and economic terms, if the Third World does not grow, the production costs increase in the First World, and if developing countries do not generate such a demand as to revive the development cycle in Western countries, the United States and the European Union will enter into the typical Marx-styled model of capitalistic crises, namely *structural overproduction,* which generates an excess of liquidity, a subsequent *liquidity trap*[105] and an industrial crisis with too many goods produced and too few wages to buy them. Conversely, if we succeed in stimulating self-propelled economies in the old developing countries, also by means of the U.N. and World Bank operations, we will create lively and wide markets, which can be complementary to our "mature" productions, and acquire areas for the expansion of the export of high value- added products. This will be the geo-economic challenge of the next few years.

Therefore, if the energy efficiency of Western industrial activities increased – and the study of an important global consultancy agency demonstrates so for the United StateS[106], by acknowledging that there is a 23% energy saving rate in the costs not related to transport - the U.S economy could save 1.2 billion U.S. dollars per year, while, with specific reference to the European Union, similar models lead to results similar to those of the United StateS[107]. Hence, if energy saving increased in the old industrialized world, virtuous economic mechanisms could be triggered off, with the same average wages and unit public spending. The European Union and the United States could represent markets for developing countries' produce and first industrialization products', accumulating sufficient capital *at local level* for the optimal water management. The "green growth", as defined by World Bank's leaders, could also avoid the current typical Western tendency to preserve insolvent companies which, for geopolitical reasons, cannot be transferred to Third World countries: a *productivity trap* which goes hand in hand with the "liquidity trap" we have previously mentioned.

Moreover, a new management of North-South relations could avoid the volatility of prices of agricultural raw materials, which has characterized the recent crises in Maghreb and other Islamic countries, thus allowing both greater differentiation of agricultural production in the

world peripheral areas, and a new ability of creating an internal market for their produce, with clear spill-over effects for Third World countries' economy and wellbeing[108].

Malnutrition, which depends directly on water availability, goes hand in hand with water scarcity and reduces both the possibility of working and the possibility of managing one's own political and social role. Hence, also considering the U.N. projects in the sector, without acceptable *water availability* in risk areas, the world will consequently experience greater migration towards developed countries, in addition to low-cost manpower, within the framework of clear economic crisis, in which the public welfare cannot take up further commitments. There will be also the destruction of the already scarce import potential of those countries for our comparative overproduction, further upward volatility of prices for agricultural raw materials - which will affect directly developed countries - and the strategic and geopolitical destabilization of the old Third World, which – after the localization of the Qaedist "sword Jihad" in Yemen, Afghanistan and the Southern Islamic Maghreb region - could turn into a real geostrategic bomb, which would put a bad strain on our system of values, economy, social and cultural stability.

2000年3月，瓦洛里教授在北京大学国际关系学院发表演讲后与该院师生的合影

Ilustration 27

CHAPTER 8: Hotspots. The Turkey-Syria-Iran triangle

67% of the earth surface is covered by water, but 33% of world population lives where water availability is scarce. At least one billion human beings don't have sufficient access to drinking water and 2.5 billion people don't access water for basic sanitation, hygiene and for nutritional and biological needs[109]. This means that, statistically, the highest population density corresponds to the lowest water availability, and vice versa. As maintained by the experts of historical statistics, the substantial increase of life expectancy in Europe started with the spreading of low cost drinking water. The situation in the Middle East and in other developing countries in Africa and Asia, characterized by the lack of such resource, is potentially destructive for local populations and, prospectively, for the whole mankind[110]. The minimum quantity of water needed daily by a human being has been calculated to be 25 liters, whereas for related activities (washing of clothes, cooking, etc.) the need reaches 200 liters/day in developed countries, with peaks of 300-400 liters. In countries,, where the economy is mainly based on agriculture, the shortage of water is highest and, paradoxically, the need is greatest, because agriculture is particularly water-intensive[111]. In the whole Middle East, the quantity of water available per person *per year* is equal to 1,500 cubic meters, while the average yearly population growth in the region is 2%, namely 7 million people. In this context, agriculture drains 90% of the already scarce water resources and leaves the remaining 10% to nutrition, sanitation and hygiene purposes. On the basis of recent calculations, the current average of 1,500 cubic meters/person/year is expected to fall to 500 cubic meters/year.

The axis of water resources in the Middle East, and particularly in the Turkey-Syria- Iran Triangle, are the Tigris-Euphrates river system, the Litani, the Asi, the Nile and Draa rivers. Hence, notwithstanding political issues and bilateral and multilateral treaties, the Middle East water system, linked to the one of the Persian Gulf and of Central Asia, would be able to supply sufficient water to local populations[112].

Illustration 28: Tigris- Euphrates river system

In the "Far West" region, in the Moroccan Maghreb area, the Draa river is the main supplier of water to Arab populations. We will examine it at a later stage since it is a water system, which is both border and bone of contention between various areas: Morocco, the Polisario Front and the Rio de Oro, the migrant tribes traditionally crossing the Draa river region.

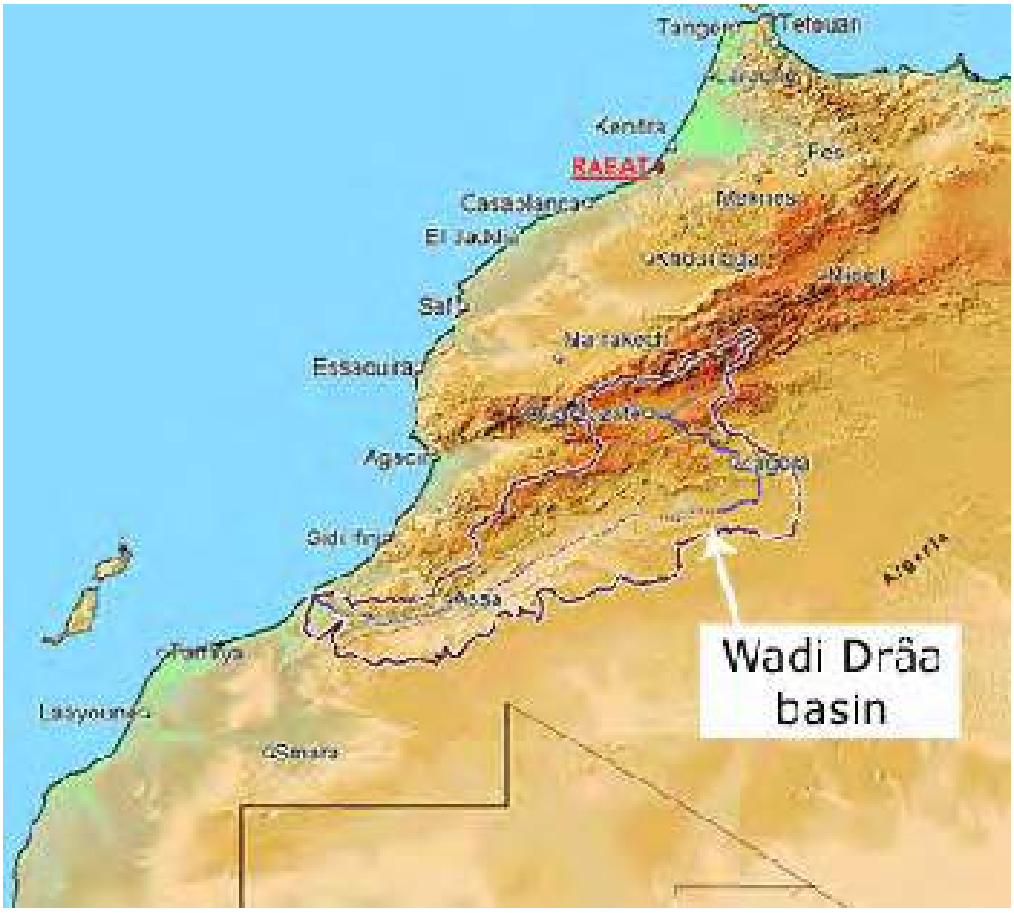


Illustration 29: The Draa River

The Firat-Euphrates river is 2,930 kilometre long, whereas the Tigris is 1,840 kilometre long and the land irrigated by both rivers amounts to 765,831 square kilometres. This is the axis along which many countries' geopolitical tensions and projects develop: Turkey, the country from which both rivers defining Mesopotamia originate; Syria, which has a rural economy largely dependent on the Tigris water flow; Iran, which has to face a substantial shortage of water for its agriculture; and Iraq, which has to grapple with a dual shortage of water, both for human use and for crops[113]. The geopolitical tensions along this axis has started – or rather has better defined itself – with the establishment of the

South-Eastern Anatolia Development Project (GAP according to the Turkish acronym), which plans to build 22 dams and 19 hydroelectric power stations, besides a tunnel to make the Tigris and Euphrates water reach Harran, with a view to irrigating 1.7 million hectares. It affects 9.5 million inhabitants of the region and - as other similar, though less imposing, operations, which were made in Eastern Europe in the XIX century – it plans to *stabilize resident people* and equalize, besides increasing, incomes in the areas concerned by this project. Those who are experts in the economy of water structures, or of the development that we currently define as "responsible development", always try to avoid a situation in which, with water infrastructure, *peoples tend to massively transfer from one area to the other* and turning from agricultural surplus producers into beneficiaries of international economic aid, which is always linked to strategic and geopolitical constraints. It was also the aim of the European Community's Common Agricultural Policy (that currently uses up 34% of the E.U. revenue), which was at the basis of the political agreement reached by the signatories to the Treaty of Rome. At that time, the bilateral clash between the United States and the USSR seemed to limit the possibilities and financial resources to be devoted to the purchase of food products in the market-world and the EEC implemented multilateral protectionism to secure essential produce also in case of a final clash between the two superpowers. A project which, *mutatis mutandis,* is at the origin of the Turkish GAP idea: to stabilize the masses of that area, control the geopolitical territoriality and avoid the food dependence and asymmetrical, financial or military shocks, which would inevitably occur if one's own people's food survival were left in the hands of global markets in the event of an evident conflict or regional tensions. Water geopolitics:

a) Is substitutive because regional players see in water regulation the possibility of entrenching, in the agricultural sector, "dangerous masses" that would otherwise be bound to move to the outskirts of large cities, with clear explosive effects at political and economic levels, considering that *welfare* is virtually non-existent in the Middle East, except for Israel;

b) Can play on food autonomy, the axis of those countries' foreign trade stabilization and be a substitute for oil and gas cycles;

c) Enables to redefine post-colonial borders which, in no way, can be acceptable for the Arab countries of the Great Middle East;

d) Enable - in connection with water for agricultural use – to shift internal electric consumption from oil and natural gas to hydroelectric power, which allows greater exports of hydrocarbons and a lower impact of petrol subsidies to people;

e) Is a tool for asymmetrical war against the neighboring counties more reluctant to accept new or old regional hegemonies;

f) Allows a lower activation of international aid to those countries, which enables a different collocation of the Arab Middle East in the market-world and better terms of trade for all the products of the region, including oil ones.

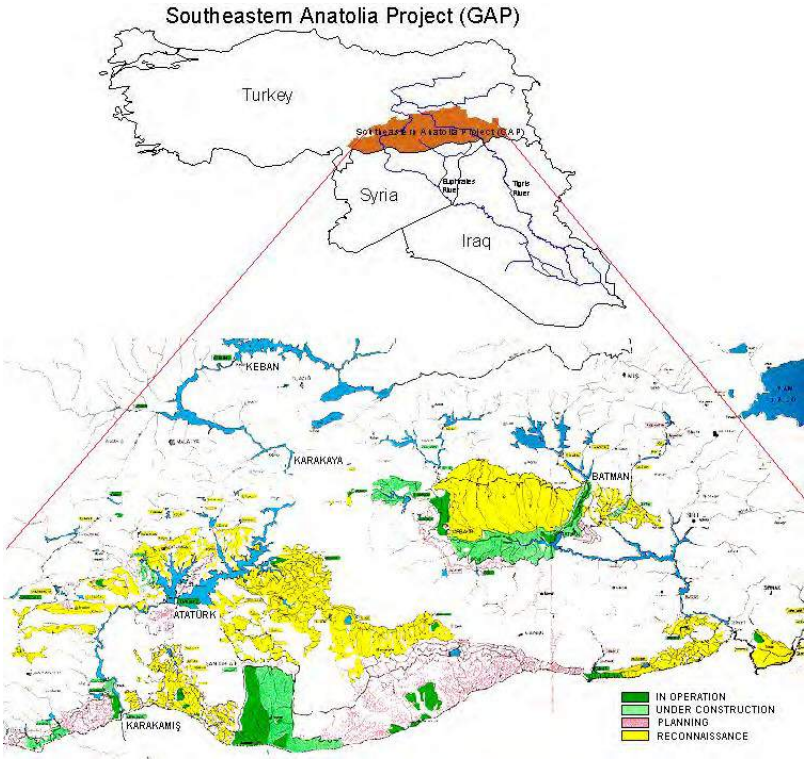


Illustration 30: Southeastern Anatolia Project (GAP)

GAP will cost 36 billion new Turkish liras[114], 21 of which were already spent in late 2005, namely 32 billion U.S. dollars, 17 of which already invested.

Will this structure be a new source of tensions in the Middle East? Turkey uses the Tigris and Euphrates water since both rivers originate in its territory, but certainly Iraq, Syria and Iran find themselves in a difficult situation as a result of this choice made by the Turkish government, and tensions are bound to be reflected on the axis of the primary conflict in the Middle East, namely the one between Israel and the neighboring Arab-Islamic countries. In fact, Turkey accounts for 98% of the water potentially carried by Tigris, whereas Syria accounts for 12% of the total (as can be easily imagined, potential water is different from the water really carried), but with rivers such as Khabur and Balikh which, however, originate from the Turkish territory[115].

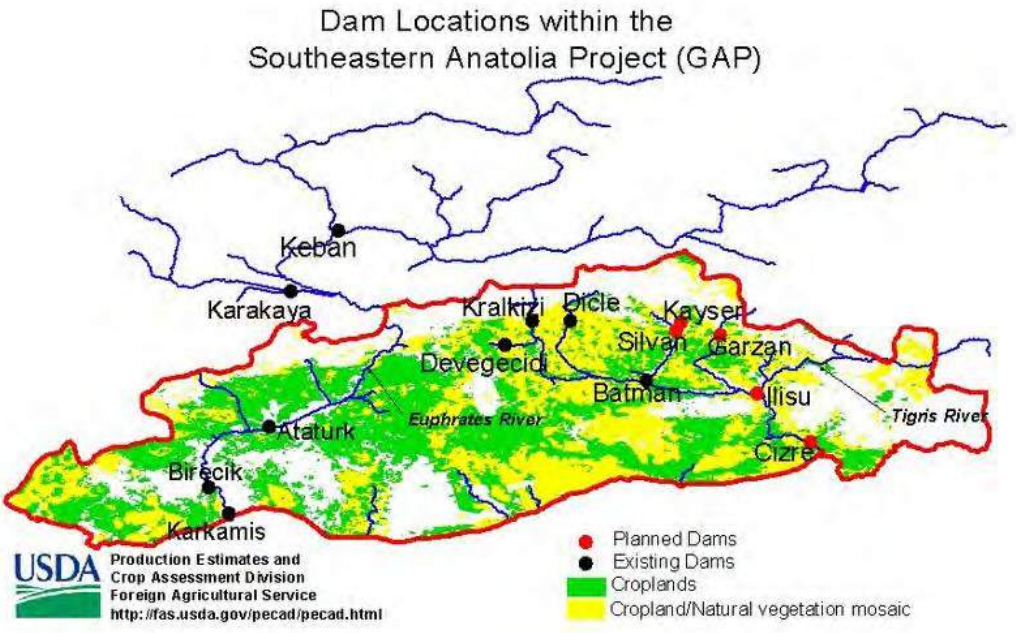
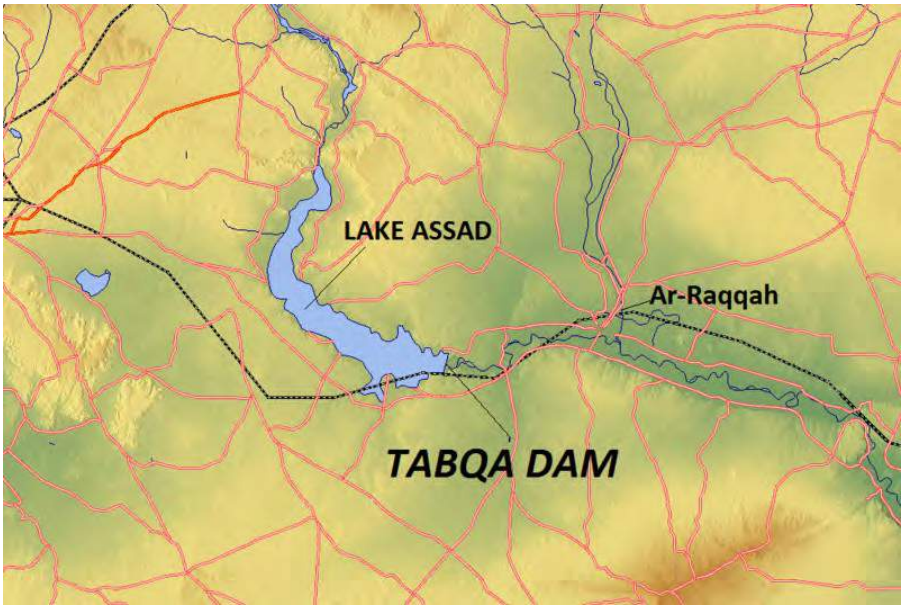


Illustration 31: Dam Locations within the Southeastern Anatolia Project (GAP)

Syria intends to use the Euphrates water to irrigate 240,000 hectares of fields, especially for the water collected by the Tabqa dam, which has generated the Assad lake, funded at first by West Germany with the merchant bank founded by Hjalmar Horace Greely Schacht, Hitler's former Finance Minister and subsequently, in 1965, by the

Soviet Union. This water mainly comes from Iraq. For its current agricultural and energy needs, Syria supplies water to Iraq for seven operating dams, namely Haditha, Baghdadi, Ramadi, Hindiya, Fallouya and Hammurabi[116]. For Iraq, which in 2009 had the worst crop in its recent history, Turkey prepares a policy of bilateral agreements, without the strategic link with Syria, and does not want *stable agreements on the water issue, which is an essential strategic asset for the Turkish power projection.* In this strategic context, Syria's dams and hydroelectric and water policy, in general, are needed to *reduce oil and natural gas internal consumption* and, hence, allow optimal exports, stabilize the masses of that area by means of agricultural activities for them not to press on major cities, keep the masses at the State borders to avoid both the transfer of other alien peoples and the geopolitical porosity of the areas of friction with Turkey, Iran and Iraq. The contrast between Turkey and Syria for the GAP water is easy to imagine: the Turkish plan intends to use all the Euphrates water, the only source of water for Syria which, through this river, keeps the Lake Assad level acceptably high for hydroelectric power.



Ilustration 32: Lake Assad

The technical issues were opened with technical conferences between the two countries[117], which started in the 1960's[118], up to reaching a protocol of agreement on July 17, 1987 that led to a balance of seasonal takings to favor the normal activity of the Assad Lake, while the 1990 protocol allows the transfer of 58% of the Euphrates water coming from Turkey, from Syria to Iraq, with an evident link between geopolitical and military needs and hydro-economic uses. In the Turkish policy of "zero problems with neighboring countries", devised by Minister Davitoglu, however, the agreements reached after 2001 on water distribution and sharing were a source of further cooperation between Syria and Turkey, which implies a clear geopolitical operation: *to determine the stability of Syrian peripheral populations for:* 1) controlling the Kurdish majority area, 2) favoring the penetration of Turkish products into the Syrian market, 3) making Syria's dependence from Iran less asymmetrical[119].

Turkey has also the problem of the Oronte river (Al' Asi) which originates in the Lebanon and flows into the Mediterranean by crossing the Hatay Turkish province.

Controlled by two dams in the Lebanon and by two others in Syria, the Al 'Asi river crosses the Turkish-Syrian border and is an extremely important strategic system for Syria, which manages the Lebanon and its power projection onto Israel also from this area, and for Turkey, which must rely on the Oronte river for its relations with the Middle East Southern coastal area. But, basically, what Syria and Iraq want from Turkey in relation to the river water regime? Syria maintains that the Turkish GAP dams have reduced the soil agricultural efficiency and caused soil erosion. Iraq has asked for greater water availability for expanding its agricultural activities which, as often happens in the

Middle East, are seen *as an unavoidable alternative to the oil economic cycle and an inevitable asset for financial and economic autonomy from local lenders and international banks*. Turkey argues that its network of dams has regulated and stabilized the course of both Mesopotamia's rivers and hence will allow greater efficiency of Syrian and Iraqi agricultural activities, again with bilateral agreements.

Ilustration 33: Predominantly Kurdish regions in Syria

Turkey has no excess water available. Nevertheless, Iraq thinks it has "ancestral rights" on rural irrigation from the Tigris and Euphrates rivers, and has proposed to Turkey and, indirectly, to Syria the implementation of a mathematical formula which, according to Iraq, can distribute all Mesopotamia's water in an equitable way. This means that each of the river states will notify the others in advance of its own water needs; data will be subsequently examined by the joint committee of the three countries which will calculate the needs for the projects already completed those for the projects being developed and finally for the projects only designed and still in the pipeline. Ultimately we discover that, on the basis of this formula, Turkey will be only entitled to one third of the river water originating from its territory. To some extents, this project is similar to the one proposed to Turkey by Syria. Syria relies on the fact that, on the basis of international law, Tigris and Euphrates are "international rivers" and hence "shared resources", again according to the mainly pactional logic of international law. Therefore, the mathematical formula proposed by Syria is somehow different[120] from the Iraqi one: regardless of the other two countries, each nation will submit requests that will be calculated on the basis of the seasonal river flows under consideration. Conversely, if each individual country's water demand exceeds the envisaged one, the quantity transferred to the country recording a water deficit will be shared out between the other two countries proportionally. Turkey argues that, again according to a formula of international law, it has been "the first to develop" the network of dams and distribution of Mesopotamia's river water – hence it cannot be treated on an equal footing with the other two river states. As an alternative, Turkey has offered to Syria and Iraq a three-stage plan including: a) the collection and exchange of data on river carrying capacity and rainfall, b) the check of the data collected, c) the calculation of the needs for water use *at the various points of the water research and control stations,* to determine the flow, needs and especially losses of the Mesopotamia's water system[121]. At geopolitical level, if Turkey succeeds in managing the Tigris and Euphrates water issue to its benefit, it will reach these goals: 1) it will have a *droit de regard* on its Eastern and Northern borders, the key for its expansion in the Central Asian region and the achievement of its Panturanic project of reunification, under its leadership, of the many peoples of Turkish origin

from Anatolia up to the Chinese borders; 2) it will better control the borders for the definitive solution of the Kurdish issue (the issue of the so-called "mountain Turks", as euphemistically defined by the Turkish press); 3) it will be in a position to have strategic depth eastwards and northwards, without overloading its relationship with NATO of too many issues and allowing to establish a different form of relationship both with Iran and Syria and, southwards, with the region dominated by Saudi Arabia, of which it would reach the same strategic weight and geopolitical clout; 4) it will come into contact with Central Asian oil economies and turn into their natural *pivot* for the export of their oil and natural gas. Obviously, the sedentarization of wide peripheral masses, who could press on the Turkish metropolitan system, is a further *asset* for Turkey. The water problem is different for Iran, which has a geopolitics now projected onto the Persian Gulf and the stabilization of the Syrian-Lebanese axis – which is tributary to Iran – to oppose Israel and not only it. The Shia Republic has a surface of 165 million hectares, only 5% of which can be cultivated[122]. 11,5 million hectares are down to agriculture on a permanent basis, 3,5 of which have been irrigated by stable structures since 1987, and the remaining hectares rely on rainfall for its fertility. For Iran, the problem lies in the asymmetry between the various areas for the distribution of river water, mainly coming from Khuzestan and the Zagros mountains, which allows a modern and remarkably valued-added agriculture in the areas close to the Persian Gulf while, still today, the agricultural activities in internal areas are closely linked to a survival cycle, with the only exception of pistachio growing – a *de facto* monopoly of the family of a well-known clerical leader of Khomeini's revolution. For the Iranian leadership, a primary goal is to build dams for the production of electric energy, which can enable the internal market to put lower pressures on the production of oil and natural gas and lead to a greater export share which, *ceteris paribus,* may allow to accumulate resources for maintaining and preserving the regime – which is not an easy task as it may be assumed – and for the various missile and nuclear weapon systems that Iran intends to develop (and, indeed, it has already done so) as an inevitable asset to reach the regional power status and acquire hegemony over the "Shia international" surrounding Iran reaching up to Central Asia. On the other hand, this policy tends to the desertification of some rural areas and the pre-

eminence of urban areas over rural areas, just to use Lin Biao's formula dating back to 1967[123]. The Iranian leadership tends to turn peripheral rural areas into areas for extensive and selective agriculture, with an ever lower need for low-cost manpower, to acquire these peoples in the "Shia political welfare" system, which allows political control over *dangerous classes,* as well as the creation of former rural manpower accepting urbanization in exchange for a gainful job in the industrial, civil or military sectors – as happened in Italy in the 1960s.

Illustration 34: The Karun River

As we have already seen, the dams are along the Karun river, and Iran receives river water from Afghanistan which, when peace is restored there, will be one of the largest world *reservoirs* of water for agriculture uses and the production of electric power, by means of the Helmand and Arax rivers, at the border of Azerbaijan – namely water reserves which are managed by 42 multifunctional dams for rural and electric power water.

After an agreement with the World Bank in 2008, the dams will increase to a total of 177. *Regionalization of Iranian water,* "multi-utility" policy of the water system by Iran, use of the water system (which is managed by about 60 private companies, or rather linked to the various sectors of the political and religious world) for the primary support to urban masses, management of the water network both in rural and urban areas, within a *politically-oriented* system which does not allow serious re-investment in the renewal of waterworks. A water crisis in the Shia Iranian Republic is possible in the future[124]. The effects will be dangerous not only for Iran, but also for neighboring countries, which may experience a sort of "water strategy" parallel to the strategy of the ABC threat against Israel and the Gulf Sunni Arab countries.

The hydro-geological and political system of *water wars* in the Shia Republic of Iran is particularly complex. On the one side there is the historical issue of the legal ownership and of the borders of the *Shatt El Arab,* which is the Southern axis of the Iranian strategy. On the other side, we experience tensions over the Helmand river water between Iran and Afghanistan. Two strategic twists which make Iran particularly sensitive to the issue of water and its management.

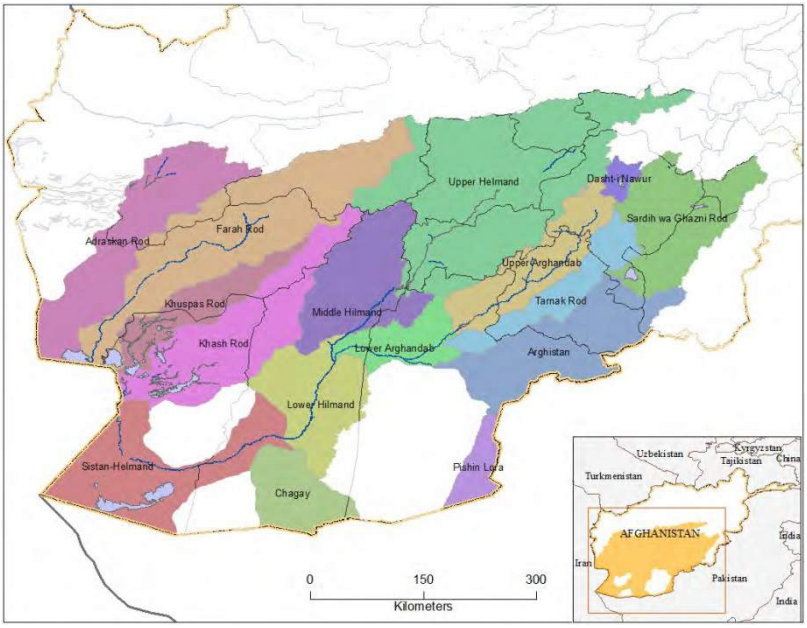


Illustration 35: Helmand River Water Geography

At hydrogeological level, 52% of the Iranian surface is covered by mountains and deserts and 16% of its territory exceeds 2,000 mtetres of altitude. The country's central plateau, located between the Zagros mountains and the flat and coastal areas, account for 50% of the whole surface of the Shia Republic of Iran. It is mainly covered by salt material (the so-called *kavir),* while cultivable land is equal to 51 million hectares, namely 29% of the country's total surface. In Iran the water collection areas are situated[125] in the Central Plateau, in Markazi, in the area of the Oroomieh Lake (Urmia) in the North-West near Azerbaijan, in the Persian Gulf and the Oman Gulf, in the Hamoon Lake and the Karakorum area in the North-East. Tensions over the Helmand river water, however, are the axis of Iranian "water wars": before the Taliban rise to power, namely the Sunni Koranic "students" organized – and we could say "invented" – by the Pakistani intelligence[126] (and this is the reason why many Iranian decision-makers ironically "thank" the United States for having opposed the Sunni Taliban[127]), Iran could take 850 million cubic metre water per year from the Helmand river, in agreement with Afghanistan. However, the Sunni "students" completely disrupted that river water flow towards Iran, thus causing very

remarkable environmental and agricultural damage in the Iranian provinces of Sistan and Baluchistan.

Iran's total surface suitable for irrigation is 62%, and is almost completely managed with surface water and the traditional local rural method of *qanat* already told by Herodotus[128]. 98.5% of land down to agriculture in Iran is privately owned – which underlines the strong role played by the autonomous economy in the Shia economic theology[129] - and is concentrated in the North-West, in the West and in the coastal area on the Caspian Sea.

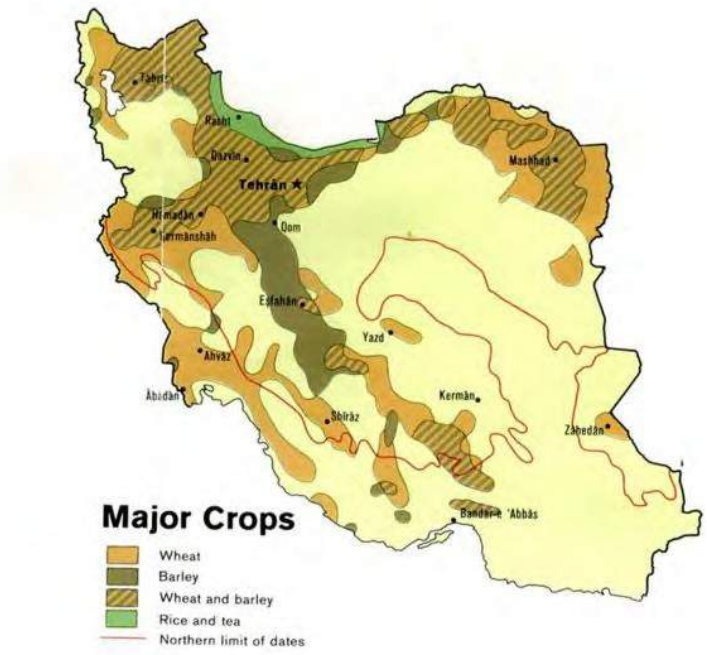


Illustration 36: Major Crops

Hence, high salinity, presence of traditional rights among rural masses, that often do not consider technological evolution and the needs of agriculture and the complex management of Iranian water which, on the one side, the Shia government wants to use for electric power production and, on the other, it has to manage at best for food autonomy. At this juncture, the issue of water tensions between Iran and Iraq becomes essential to understand the link between economy and geostrategy in the Iranian past and future "water wars". As is well-known, the war between Iraq and Iran started in 1980 and ended in 1988, thus definitively destabilizing the oil system of both countries[130]. The axis of the clash was control over the *Shatt El Arab,* the primary route for oil transport in the whole Great Middle East. The first legal settlement of the dispute between the Ottoman Empire and the Persian one dates back to 1639 at the end of the Ottoman-Safavid war. The Treaty of Zuhab (or Khasr, as defined by the Persians) granted Yerevan, in the

Southern Caucasus region, to the Shias, and the whole Mesopotamia, including Baghdad, to the Ottomans[131]. With reference to the *Shatt el Arab* issue, the Treaty granted to the Ottoman Empire the representation of the coastal tribes of the lower part of the river, namely the "Arabs of marshes". This has never been accepted by Persia, which has always regarded the *Shatt el Arab* as a "natural border" for its own State. Tensions did not slacken and a second Treaty was signed on the river, the 1847 "Second Treaty of Erzurm", thanks to the mediation of Russia and Great Britain, which envisaged the creation of a committee on borders that ended its activities in 1914[132]. In this Second Treaty to which we refer, Iran acquired the port of Khorramshah, the Island of Abadan, and the left bank (namely the Eastern one) of the river. It is not clear whether the sovereignty over the whole river remained Turkish, but the document stated that the Persian ships could pass freely from the river mouth to the "contact point between both countries' borders".

Illustration 37: Shāh Ismāil's Empire

Conversely, Iran relinquished its sovereignty over the city and the area of As Suleymaniyyah and ceded the plains of the city of Zohab to Turkey, while the Ottomans ceded the mountain area of Zohab and the Kirind valley to Iran. At the end of the activity of the Committee established by the Second Treaty of Erzurum[133], Persia had the Island

of Muhalla and the two side islands in front of Abadan, the four islands between Shetait and Maawiyeh and the two islands in front of Mankuhi, as well all the small islands linked with shallow water to Abadan or to the Persian mainland along the Nahr-Nazaleh line[134]. Nine of the Persian Gulf islands are under Bahrein's sovereignty, 34 under Iran's, other 9 under Kuwait's, 2 under Saudi Arabia's, 4 under the United Arab Emirates' protection. As can be seen, there are very strong geopolitical tensions between a country such as Saudi Arabia, the historical Sunni competitor of the Persian Shia empire, its minor allies and Iran; each of these players cannot safely control the primary water line which is the axis for the world oil supply by sea. Currently it is calculated that 40% of global oil is transported through the *Shatt el Arab*[135].

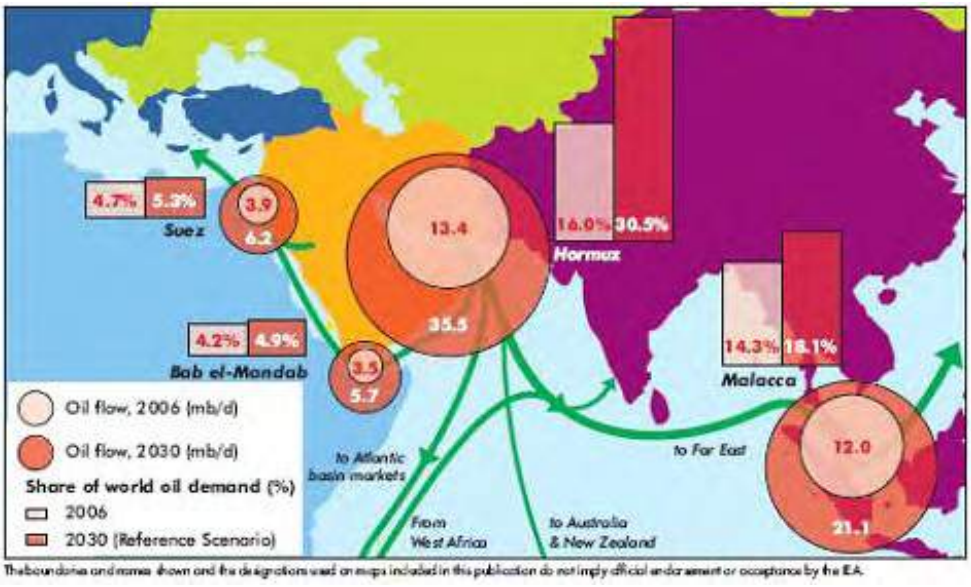


Illustration 38: Oil Export Flows from Middle East and Major

Hence, it is evident that Iran regards the issue of its sovereignty on the water line as a necessary complement of its energy autonomy both in relation to hydroelectric power, which serves as "substitution economy" for its oil, and the control of its commercial and oil communication lines, that Iran views as essential for its geoeconomic and strategic security[136]. At the end of 2010, Iran's hydroelectric power production amounted to 61,000 MW, with 40% of the grid production in private hands or, more often in the hands of the "foundations" linked to the

regime and its "power horizontals", just to paraphrase the terminology used in Putin's Russia[137].

Illustration 39: Major Oil Choke Points, Oil Flows & Pipelines 2008

Oil and water and oil do not mix, if not at very high temperatures and pressures; nevertheless, in Iran's water politics there is no need for a powerful thermodynamic thrust. In its territory, Iran has rivers it shares with seven neighbouring countries and about 22% of its border territories have rivers which can be defined as rivers under a "co-

ownership" regime. The Shia country is now one of the 26 world countries already experiencing shortages of water for human and agricultural uses[138]. In fact, if in 2031-2032 the level of usable and, in particular renewable, water for every Iranian citizen falls below 1,000 cubic metres/year, the issue would not lie in controlling the link between local population growth – which is always high, but could decrease before that time – and survival of food crops, but rather in considering that the lack of renewable water, which is particularly important for health reasons, would be compounded by a "zero sum game" between water for health reasons and water for agricultural uses, with consequences which can be easily imagined. Currently the damage suffered by Iran as a result of climate arid phases amounts to 1,500 billion rials (1 Euro = 14,922.78 Rials[139]) with a 94% share of economic damage affecting the agricultural and husbandry sectors. Besides these general considerations, we must recall that the Shia Republic ranks 16th in the world in terms of population, who totalled 77,891,220 in July 2011[140]. We must also add that Iranians' access to drinking water accounts for 86% in urban areas and only 74% in rural areas, while in 2003 (the last year for which we have reliable data) the growth of urban population – a phenomenon which could reverse this data in the short term – increased by 40 millions compared to the 17 million urban citizens recorded in 1979, the year of Khomeini's revolution. Today, according to other data, it accounts for 33% in rural areas and 67% in urban areas[141]. It is a situation which recalls the speech delivered by General Marshall in 1947, that started the "Plan" named after him"[142], which rightly regarded the balance between *farmers,* who sell their products in exchange for money and tools to *city dwellers* who eat them to survive, the "root of Western civilization" and, we can also add, the root of any other possible civilization based on a rational division of labour. If, as happened in Egypt with the 1977 "bread riots", the relationship between food autonomy and low prices (including subsidized and capped prices) of basic foodstuffs and people's income average is broken, we will have to come to terms with a sort of *opposite Ricardian model of income:* every increase of food prices generates, in its turn, a decrease of productivity[143]. However if, as Ricardo foresaw, the demand for manpower increases more than the population growth rate, resulting from new investment, technology or any other reason (wars, colonies, etc.),

entrepreneurs may pay an *overprice compared to the income "bronze law" (*indeed, Ricardo defined it as the "iron law")[144]. Hence, in Iran as elsewhere, the growth of average food prices, jointly with de- ruralisation, will lead to a structural environmental and economic crisis, which will generate new proletariat who, though being urbanized, will be unable to be integrated into high value-added economies that now do not even exist in urban areas.

The exchange of the two *surpluses* between urban and rural areas, assumed by General Marshall in his speech delivered in 1947, will be no longer possible.

Therefore, if the asymmetry caused by the low productivity of urban people added to the rural de-population and, hence, to the scarcity of both drinking water and water for agricultural uses, the combination of these two factors would be destructive both in Iran and in the other Great Middle East countries.

Furthermore, the issue of Iranian water is magnified by the need to use large quantities of water resources for nuclear and military programs. The choice that Iran is very likely to make, namely to resort to "light water" reactors[145], will be decisive for the environmental and economic sustainability of the Iranian military-nuclear project. If we look at the water distribution on the territory of the Shia Republic, we see that the "water line" precisely corresponds to the spreading of water resources. Furthermore, if we analyze this issue by means of *abduction*[146] - namely with the form of logical inference and reasoning and inductive rationality that the American logician Charles S. Peirce defined as the "root of thought" - the link between Iranian "covert" networks[147] and the water system should trace the major water supply networks. Hence, precisely with reference to the Iranian nuclear "covert" networks, it should be linked to the system of dams and major rivers' deviations.

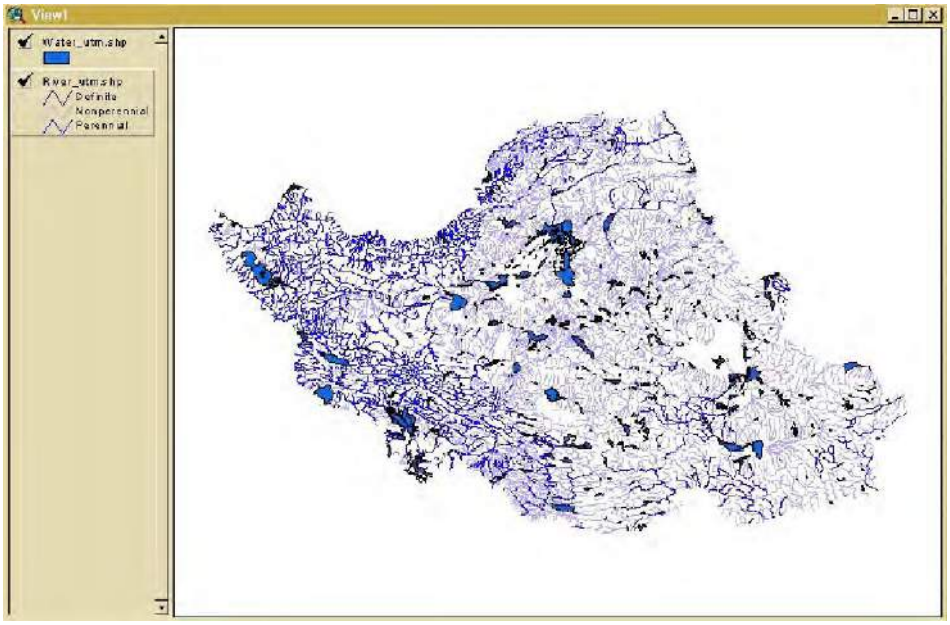


Illustration 40: Iran's Water Resources

Therefore, while the previous map shows Iran's water resources, we must compare it with the map of Iran's current nuclear facilities so as to see the "gaps" and make our adductive reasoning and assumption be corroborated.

Illustration 41: Shafi'zadesh Site - Qazvin

Shafi'zadeh[148] is near Qazvin, in the area which records the largest average presence of river water in Iran[149] and at the core of a strategic region which can threaten the whole Asia Minor and the Middle East[150]

Hence, the network of Iranian clandestine nuclear facilities follows the direction of stable water, and has an autonomous command chain compared to the visible – at least apparently – political and military system[151].

Hence, while, according to international standards, every Iranian nuclear facility has average water requirements equal to about 2,150,000 liters/year - and this is just a conservative estimate[152] - and the Iranian nuclear facilities surveyed and controlled by the IAEA are *at least ten,* the water needs of the Iranian nuclear system amount to *at least* 21,500 million liters/year.

Illustration 42: Iran's nuclear facilities

If we consider that the Iranian major rivers' capacity totals 21,330 cubic kilometres/year[153], and we calculate it in litres, we realize that it is a huge figure, namely 2.122e+13[154] which, obviously, is bound to be "robbed" from the neighbouring rivers.

Hence, any sign of expansion of the Iranian nuclear program is indicated by a phase of quick and significant *water depletion* in the networks of Helmand, Arak and the Tigris and Euphrates tributaries.

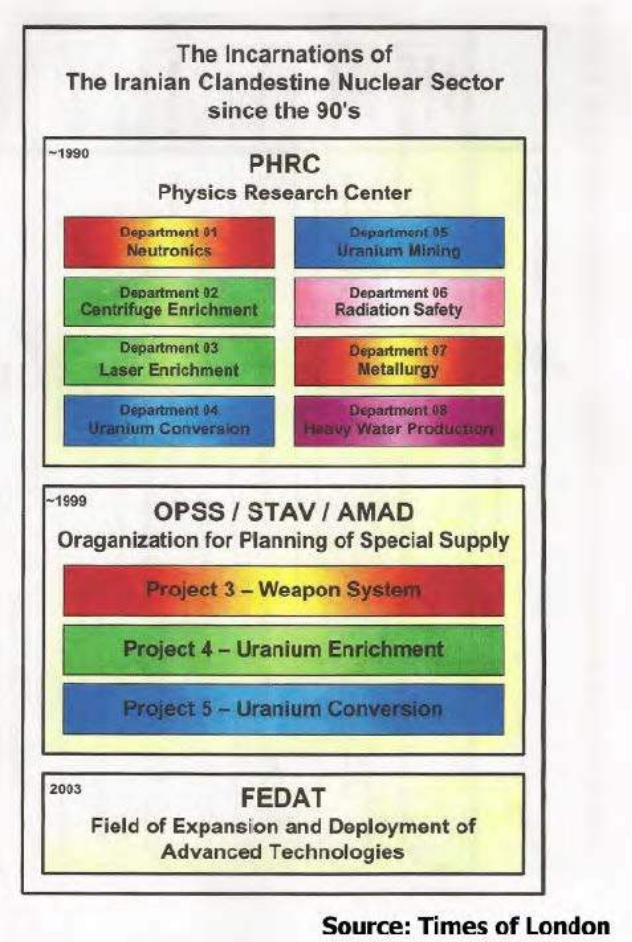


Illustration 43:The Incarnations of The Iranian Clandestine Nuclear Sector since the 90's

In most recent years, on average, the volume of renewable water in Iran has been 130 billion cubic meters and considering that one third of the Iranian economy GDP is still linked to the agricultural cycle, we can imagine a strategic and structural contrast between the water needs for enrichment and management of the uranium cycle and the economic policy line of the Shia regime, which has long been focusing its efforts on the expansion of the agricultural sector so as to avoid the excessive dependence on the oil system. This system is still dominated by OPEC, which is no longer the top hydrocarbons producer, and where the leading role is still played by Saudi Arabia and its allies of the Sunni Gulf, with which Iran is having a strategic confrontation whose solution will simply stem from the strategic positioning of the new "Arab springs" *behind* the Saudi region[155]. Furthermore, it is worth recalling that Iran uses up 73.8% of yearly renewable water compared to a world average equal to 40%[156]. Hence, if we combine this data with the progressive decrease of the volume and quantity of the Iranian water table, linked to the ever greater consumption of underground water bearing strata, which accounts for 55% of total consumption, and if we consider that 150 of the 612 plains existing in Iran are classified as "reserved and protected areas", we can easily understand how Iran's geo-economics' formula cannot be managed in the long run. Too much water used up by nuclear facilities blocks the agricultural system, which is the primary way to diversify Iran's economy; the agricultural system gets depressed and Iran keeps on depending on the hydrocarbons economy. For the Iranian strategy, this makes ever more necessary to have military-civilian facilities which, however, are ever harder to support considering their unavoidable water requirements.

Moreover, if we consider that Iran's *oil depletion* should make the Shia Republic reach a "zero sum", in terms of availability of oil to be exported, within 2012-2013[157] and that the water needs for all Iranian oil wells currently amount to 687,320 liters of desalted

water[158], we discover that also oil extraction - which requires ever larger quantities of water the more wells impoverish themselves - plays both against agriculture and military- civilian nuclear planning[159]. The cost of the Gulf future desalinization by Iran is estimated at 170,000 million U.S. dollars[160], which have already been envisaged by the Shia government. Nevertheless, also in this case, the cost of the desalinization and transport of water will be a heavy drain on Iran's coffers, which shall either press, as a *free rider,* on a cost of its oil higher than the OPEC average one – which will expose the Shia regime to the asymmetrical shocks of the Vienna oil oligopoly of its colleagues- competitors, namely OPEC - or on a combination of strategic threat and sanction pressures on *non-oil* goods imports. Conversely, if the Iranian military-civilian nuclear network used nuclear energy for desalinization, which is *energy-costly,* with a cost calculated by IAEA ranging between 50 to 94 cents of U.S. dollar per Reverse Osmosis (RO) unit[161], the 120 nuclear desalinization structures, that Iran is already operating, will be able to use up the share - which is highly anelastic both at economic and technological levels - that would be needed to make the Iranian military nuclear threat credible, or to cause a severe environmental *stress* for the Persian Gulf water. After all, that water still has some pending issues in terms of sovereignty attribution for Iran and Iraq and, hence, this would also lead to a probably unsustainable increase of costs for agriculture and also for Iran's oil production which, however, would tend to reach - even more quickly - a situation in which it would be unable to be *export-oriented*, precisely due to this difficulty in finding drinking water or water acceptable for industrial uses. Should agriculture have to support too high prices for its products, resulting also from the increase of its water supply costs, Iran would be faced with a double dilemma: if it does not support oil with its water production, it will no longer have funds for the conversion of national agriculture; if agricultural prices increase, either national wealth will decrease or

huge inflation will be generated and, finally, if Iran has no longer economic resources, resulting from oil, for its nuclear desalinization structures, it will not even be able to manage its future geo-economics autonomy from the OPEC system. The result would be that some groups' political pressures to use the nuclear strategic threat vis-à-vis neighboring countries (very likely) or trigger off a regional, and subsequently global war, by hitting Israel – and hence by "calling" the West into the region (less likely) - would paradoxically become, for Iran, choices which could be rationally pursued. And the line could still be to threaten the Persian Gulf at nuclear/missile level to globalize the Iranian threat by turning Iran into the strategic *master* of the hydrocarbons transit through the *Shatt el Arab*[162].

Chapter 9: Hotspots. Water issues between Russia and China

From the strictly geographical and geopolitical viewpoints,

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the borders between the Russian Federation and China are hard to define and even harder to control at strategic level. The Russian population is mainly located in the Urals' region, while in the border areas between the two old Marxist-Leninist empires the Chinese population exceeds the Russian one by at least 15 million inhabitants[163]. Furthermore, the "Northern enemy", as Deng Xiaoping called the USSR, has a long history of national and ideological contrasts with China. Initially Stalin bet on Chiang Kai-shek, because for a Third International Marxist ideologue such as the Georgian dictator, the middle class and national revolution had to be staged by the "advanced bourgeoisie", not by Communists who, subsequently, undermined the foundations of the liberal-national system to make an already developed country join the Third International and the Kominform focused on Soviet Russia[164]. Subsequently, even before the definitive break between the two Marxist regimes in power in 1960[165], the Soviet Union allied with India and North Vietnam, two historic enemies of China, with the evident plan of strategically encircling it. In Nehru's years, the USSR became the real strategic and information point of reference for the Indian subcontinent[166], up to the point that the Soviet Union sided with India during the conflict which led to the breakaway of Bangladesh from the Indian Federation in 1971[167]. The incident on the Sino-Russian borders consisted in the transit of at least 65,000 Uighurs (of Chinese nationality, but of Turkmenistan ethnic origin) towards the Soviet Union - a move which implied the Soviet evident management of Islamist separatism on the Chinese territory. The disputed area was Pamir, the distribution centre of Asian water resources, at the border with the Soviet Republic of Tajikistan. The old "unequal treaty" signed by the Tzar with the Qing dynasty envisaged that the border between the two empires – in the "hundred years of humiliation", as they are defined still today by Chinese historians – crossed the Sarikol mountains, which start from the Markansu river and provides water

to the Amu Darya and Tarim rivers.

Obviously the issue regarded China's food autonomy and the USSR possibility of militarily acquiring, in those years, the agricultural land of the Tajiki-Uighur system to reduce the costs of the acquisition of grain from the West[168]. While, as Stalin maintained, and as his heirs and critics in the CPSU continued to do after 1956, the primacy of Leninist Socialism was given to forced industrialization and mainly to heavy industry, the agricultural crisis became a permanent travel companion for the particular Soviet Communism[169].

Furthermore, Mao's China wanted to make Kamchatka, part of Siberia and the coastal areas of the Far North-Eastern region return back to Chinese territories. Indeed, Mao Zedong wanted to strategically "seal" Soviet "revisionists" towards the West and the Urals, and to reach the water, and hence rural, autonomy of the peasant Communism he had founded and brought to power against Stalin's line[170]

The water system dividing Russia and China is demarcated by three large rivers, namely Argun, Amur and Ussuri. Thanks to the "unequal" treaties the Ussuri river, with all its islands, was granted completely to the USSR. The tensions over the Ussuri river reached their climax in early March 1969, when some Chinese troops attacked the Sovietguards on the Zhenbao–Damansky Island, which was conquered by China and ten days later reconquered by the Soviet forces, while tensions between the two Marxist-Leninist empires broke out again in August 1969 in Xingkjang, the axis of Soviet possible penetration into the Chinese strategic area and point of internal tension, considering the Islamic and Turkmen populations living there[171].

As a result of the Soviet Union's collapse in 1991, the Ussuri river border were regulated and currently the Zhenbao-

Damansky Island belongs to China, together with 50% of the Heixiasi island. The Amur river, however, is the real axis of water politics between Russia and China[172]. It collects the water of the Bureya and Tongghua rivers, up to the Khabarovsk river where it flows into the Ussuri river, in which the islands are the real strategic centres for the command and management of coastal and riparian economies. It is a point of reference for the minorities of Tungus origins such as the Ewenki, the Solon, the Nanai, the Ducher, the Ulch and generally for the minorities of Tartar origins, with some Mongolian elements and links with the Cossack tribes – and this is a significant political and strategic problem for China. Hence, it is by no mere coincidence that China has forbidden fishing in the Amur river, an activity which is at the basis of the very survival of local tribes[173].

Obviously, at strategic and geopolitical levels, *control over the Amur river is essential for managing the Pacific both for the Russian Federation and China,* and control over world seas is precisely the political goal of both countries. This is the significance of the old Trans-Siberian railway and the Baikal-Amur railway line. Today China wants to use the Amur river area for economic development and, in particular, it wants to create remarkable infrastructure to avoid the traditional border tensions which have characterized the history of Sino-Russian and Sino-Soviet relations. This is the significance of the Innner Mongolia Highway and the Project for the Commercial Corridor between Mongolia, China and Russia, besides the project for the Economic Development Area of the Tunangan river, which will lead to the building of a commercial port at the mouth of the Tumen river and the creation – as happened for the China of the "Four Modernizations – of autonomous economic zones at the North Korean borders, a strategic passageway which will be completed when the economic and military relations between the two Koreas are made clear and the North Korean regime is in a position to autonomously imitate its Chinese "comrades" by

modernizing itself with the opening to the market-world and transforming (though certainly not abolishing) its internal power system. Furthermore, China is interested in expanding agriculture in the Amur valley and hence managing its main river basin, which account for about 70% of Chinese arable land. Russia has never developed activities in the fields of the region[174], while Chinese farmers sell their produce surplus to the Russians.

The Amur basin is 21,000,000 square kilometers, with 3,500 kilometers of river which are used as border between States. The Russian Federation, however, has deformed and distorted the Amur hydro-geological system with a sequence of dams on the Zeya, Bureya and Amur rivers, which disrupts agricultural stability and the production of grain surplus for the Amur population within Chinese borders. For example, the Songhua river[175] has reduced its supply potential for agricultural irrigation, while on the Mongolian side of the river only there are more than 400 mines, including both the old and the newly-built ones. An environmental crisis hit it after the blast at a workshop of the 101 Chemical Plant of the *China National Petroleum Corporation* on November 19, 2005, which discharged huge quantities of benzene into the river. Nevertheless, the reason for the meeting between Russia and China on the Amur river management are stronger than the reasons for tensions and different management of local resources. The line chosen by Russia and China is electric power generation, which envisages the building of eight power stations along the Argun and Amur rivers. It is an old project dating back to the period before the clashes over the Ussuri river. The 1962 project envisaged the building of four dams on the upper and middle Amur river for a water collection capacity exceeding 250 cubic kilometers and a related surface of 6,000 square kilometers. The idea was certainly to produce energy, but also avoid the floods typical of that hydro-geological structure. The end, at least partially, of the ideological and particularly strategic tension between the two Marxist

empires allowed in 1986 to define a "Sino-Russian Joint Scheme for the Development of the Argun and Amur Common Water Resources". China was mainly interested in developing hydroelectric power stations and hence proposed to the USSR the joint building of ten dams along the Amur river, while the Argun river had to become a "river closed" by one single dam[176]. The USSR and China did not agree on all the rest, namely management of the geological effects; fishing areas; dimension and structure of the agriculture irrigation networks originating from both rivers; management of the discharge activities of industrial companies and mines related to both river basins. The nature of the contrast is evident: the Russian Federation does not want to support China's forced development line, linked to a Chinese globalization which marginalizes Russian future "non-oil" diversification, while China has no interest in repopulating, supporting and possibly rearming the river border areas between its agricultural – though globalized - Communism and the old "Northern enemy".

The problem lies in the fact that also in the shift from Soviet Communism to the subsequent "controlled democracy", the Russian Federation has a very strong need to develop its hydroelectric system *so as to provide the largest oil share to foreign markets and particularly avoid the financial and geopolitical dependence from the OPEC system which, however, is the "reference point" for Russia's "oil and gas" policy*[177]. About 23 of the more than 50 large dams in Russia are still under repair or anyway need to be redesigned and modernized. With a view to limiting damage and monitoring the Russian Federation's development, on the one side, and avoiding the repopulation of the Chinese area paving the way for a regional economic hegemony, on the other, Russia and China have defined fifteen environmental initiatives for protecting the Amur marshes and coastal areas, which shall cover all the river system along the line which defined the old Sino-Soviet border (apart from the final "tail" towards the Korean border), a *real "cold war" border though between*

Communist countries. As we have previously mentioned, the problem is still the management of mines, which are particularly "water-hungry". It mainly regards Mongolia, a country which – due to its demographic structure and its already advanced desertification – needs large economic and water resources for its economic *take-off* which, after all, coincides with the share of national autonomy it can manage between the two old Marxist empires in which it is placed. The customer, however, is China. The two water pipelines designed are the Orkhon-Gobi and the Herhen-Gobi[178]; the issue, however, still regards the Xingkiang province, one of the most arid areas of the planet. A recent Chinese project regards the Bohai water pipeline, which desalinates the water of the North China Sea and pumps these water resources towards Xilinhot, a coal mine of great relevance for China's energy balance. Hence, for China, the central issue lies in avoiding the reverse link between water consumption and energy generation, which causes equally opposite effects both on demography and the cost of labour and health (it is worth recalling that, in Western Europe, the first increase of average life expectancy was recorded in the years when waterworks and "water at home" spread) and particularly on the balance of foreign accounts with reference to the purchase of food – a mistake typical of "Soviet revisionists" that China does not want to make even today. Moreover, at least in large cities, China plans to design various separate systems to manage clear and "grey" water resources so as to use the latter in building, car washing or the management of the public toilets' regular drainage. It is also worth recalling that, in the framework of its quick industrial development, which manages the "naive" globalization of the 1989 *Washington Consensus* as the tool of a still Stalinian project of forced industrialization, China has already destroyed 8.5 million hectares of arable land, with a high agricultural yield efficiency - though anyway such as to require 60% of the water available in China in 2010[179]. Hence there is no alternative option

to the creation of water *pipelines* making up for the Chinese water deficit, which is increasing at a 14% yearly rate. For China the central issue is the deviation of about 36 million cubic meters/year of water from the Yellow River and its channeling northwards, in an area at desertification risk. We could say that it is the negative influence of the old Mongolian dynasties which ruled the Han ethnic majority for many centuries. According to the Chinese government, said network is expected to cost 62 billion dollars and is aimed at creating the primary condition for development, namely providing water for the Northern and Eastern provinces, which are largely populated and particularly endowed with remarkable energy resources that are completely autonomous vis-à-vis the hydrocarbons global market. China uses these resources to "cash money" and diversify its energy investments but, unlike the West, it does not want to play all its cards of energy autonomy on them. Said provinces are right. Also the Three Gorges Dam, which was completed in 2008, has an impact on the ever more complex management of an important earthquake fault line and has created very difficult situations for local peoples.

Also the Yellow River - which, as any water course in China, flows from the South to the North – is recording a significant decrease of its capacity and could no longer be the hydrological "key" which, as early as Mao Zedong's time, the CPC had identified for the unequal development of the Middle Empire's agriculture and demography[180]. That key meant the population's political and military shift from rural areas to the industrial development regional poles (the "small factories" of the Maoist *Great Leap Forward* which, indeed, shaped all the subsequent policy of the "Great Helmsman") and, subsequently, the reallocation of water and mineral resources from the South to the North – a model which, with the Four Modernizations, turned into the shift of *financial* resources from China's coastal South to its arid, though politically relevant, centre. It also meant the rebalancing of the asymmetry between rural

and urban areas with the creation – after the failure of the "Great Leap Forward" – of the "free and autonomous economic zones" and finally the management of Chinese metropolises' development in terms of rebalancing of rural overpopulation. Everything had already been designed in Mao's time; from Deng onwards, the CPC ruling class reasonably adapted the *Long March* line of the peasant and levelling revolution to the Stalinian direction of "Socialism in one country" and the adjustment of the asymmetries of the Chinese economic and demographic development to the market-world system, which often naively adapted itself to China's domestic needs rather than adapting Chinese asymmetries to its development needs and pace. At water politics level, this CPC's line meant the transfer of water resources from the North to the South and, concurrently, a multilateral management of the water supply lines in the border areas with the Russian Federation, where the "Northern enemy" population was too small to pose an economic and military danger.

Also the Russian Federation uses water as a strategic resource and as a geopolitical bargaining chip with its neighbors. For example, Tajikistan[181] would accept the Russian armed forces' right of free passage southwards and eastwards if Russia backed the new hydroelectric power station in Roghun, which Dushanbe is building. The Asian former Soviet republic aim is to manage Russia against Uzbekistan, which considers the Roghun dam as a threat to its own water autonomy.

Tajikistan and Uzbekistan own almost all water resources in post-Soviet Central Asia; the latter depends on the former in terms of energy and hence water, besides being essential for peoples' lives and agriculture, is the bone of contention for the Tajik energy autonomy[182]. Obviously, this tension – to which China is not fully alien – jeopardizes the Russian military installations in Tajikistan, which are essential for Russia' primary role in the *Shanghai*

Cooperation Organization. If put under difficulty, these installations would make Russia's role in Central Asia the role of a country basically depending on Chinese geopolitics.

In the Russian Federation, 80% of population lives in the European area of the country, where the Chinese would precisely confine their "Northern enemy", while Russian water resources are almost all located in the East and the South, in areas where geopolitical control is relevant and particularly costly[183]. Hence, if the cost of water supply for housing (which currently accounts for 23% in Russia) increases to such a level as to absorb resources for water agricultural uses (42% of the total), food prices will exceed such a level as to be no longer affordable by urban economies, and Russia shall resort to financial transactions similar to those which characterized the acquisition of grain, during the *cold war,* in the West, and were a not negligible factor of the financial and political collapse of the Soviet industrialist Communism. This is the reason why the Russian government intends to invest 20 billion U.S. dollars in the creation and upgrade of national water resources, with a plan which started in 2009 and is expected to be completed in 2020. Certainly, today the Russian Federation owns about one third of global water resources usable for people and agriculture, but it must restructure the network of canals and water pipelines which, as early as the USSR time, were left becoming obsolete as a result of an inattentive and careless, or even interested, management. This will create parallel problems both for Russian energy autonomy, which cannot oppose the environmentally-friendly management of water resources, considering that today 60% of Russian drinking water is not acceptable from the health viewpoint, and that if there is no great energy autonomy - and hence large investments in the Russian hydroelectric sector, which is still characterized by very low productive and technological efficiency - Russia will be forced to suffer part of the *asymmetrical shocks* produced by the OPEC system, which could also close part of end-user markets to the Russian oil

and natural gas. From water to oil and from water politics to global strategy.[184]

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COMUNICACIÓN PRESENTADA POR EL VICE-PRESIDENTE DE LA DIRECCIÓN GENERAL DE LA BANQUE NATIONALE SUISSE

Con ocasión del Solemne Acto Académico
celebrado en Suiza, 7 de junio de 2013

Excmo. Sr D. Jean-Pierre Danthine

LA POLÍTICA MONETARIA DEL BANCO NACIONAL SUIZO DURANTE LA CRISIS MONETARIA

por el

Excmo. Sr. Dr. D. Jean-Pierre Danthine[1]

Resumen de la conferencia pronunciada a los miembros de la Real Academia de Ciencias Económicas y Financieras de España, en la sede de la *Fondation Jean Monnet pour l'Europe* (campus de la Universidad de Lausana), el 7 de junio de 2013.

La economía suiza está actualmente en buena situación aunque ha tenido que superar, estos últimos decenios, diversas crisis, entre las más importantes, la crisis inmobiliaria de los años noventa en la que el Banco Nacional Suizo (BNS) tuvo que poner freno al endeudamiento excesivo, o en la que estamos todavía inmersos, la de la eurozona, en la que el extraordinario fortalecimiento del franco suizo obligó al BNS, hace casi dos años, a una intervención masiva en el mercado de divisas para evitar una caída muy significativa de las exportaciones y del aparato turístico del país.

En efecto, de acuerdo con sus estatutos el BNS debe:

- Asegurar la estabilidad de los precios, teniendo en cuenta la evolución de la coyuntura

- Contribuir a la estabilidad del sistema financiero

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La estabilidad de los precios

En cuanto a la estabilidad de los precios, hay que tener en cuenta que Suiza es una economía pequeña y abierta, con lo que sufre las tensiones que experimentan sus vecinos respecto a primas de riesgo, variaciones acusadas del Euribor, congelación de préstamos entre bancos, frenazo al comercio exterior, etcétera.

Dada la inseguridad, los bancos privados solamente se prestan hoy con colaterales y los bancos centrales han tenido que compensar la falta de liquidez disponible para las empresas con medidas cuantitativas monetarias, convencionales y no convencionales.

Esta buena situación hizo que Suiza se convirtiera en refugio para los capitales exteriores. Su entrada no cesó de aumentar lo que desencadenó un proceso de revalorización del franco suizo el cual, de un nivel de cambio de 1,50 frs. por un euro a principios de 2010, pasó a 1,05 frs. por un euro a mediados de 2011. Ello frenó casi en seco las exportaciones y las visitas de turistas, entre otros problemas, lo cual hubiera derivado en una deflación.

Por tales razones, en septiembre de 2011 el BNS fijó el objetivo de un tipo de cambio tope euro/frs de 1,20. Para lograrlo anunció que compraría todas las divisas necesarias, sobre todo euros, con carácter ilimitado y durante el tiempo que fuera necesario.

El objetivo se alcanzó de manera casi inmediata. En la actualidad (junio 2013), el mencionado objetivo y la medida se mantienen si bien se observa, estas últimas semanas, una ligera tendencia a un tipo de cambio de 1,22/1,23 lo cual confirma que la decisión de intervenir está teniendo, en la economía suiza, la incidencia positiva que se esperaba.

Hoy se asiste a una cierta recuperación de la economía mundial liderada por Estados Unidos y Japón. En este contexto el presidente del Banco Central Europeo (BCE) Mario Draghi, espera un crecimiento de la economía europea de entre el 1 y el 1,5% para 2013 y algo mejor para 2014. No cabe duda que, de confirmarse estas perspectivas, el efecto en la economía suiza, que exporta el 50% de su PNB y el 60% de sus exportaciones van a los países de la eurozona, sería muy positivo.

Llegados a este punto, el BNS se pregunta si la masa de divisas compradas y las que todavía pueden entrar, van a disparar la inflación por encima del 2% anual que es el tope que ha fijado como límite tolerable. Hasta ahora no es el caso, más bien al contrario. Entretanto, el BNS ha comprado títulos exteriores que dan intereses y permiten, al propio tiempo, evitar la revaluación del franco suizo.

La estabilidad financiera.

El BNS debe velar también por la estabilidad del sistema financiero. Para ello tiene en cuenta las enseñanzas que le ha reportado el impacto de la crisis y que se han centrado en:

- Una subestimación del riesgo sistémico derivado de las crisis bancarias

- La necesidad de corregir una reglamentación microprudencial insuficiente

- La constatación de que una política monetaria centrada únicamente en la estabilidad de precios no basta para garantizar la estabilidad financiera

- La necesidad de luchar por la estabilidad macrofinanciera

Partiendo de estas constataciones y de que hay que manejar correctamente las burbujas para evitar su estallido abrupto, el BNS ha seguido una nueva aproximación a la dimensión estructural de la crisis para evitar la propagación del riesgo sistémico pensando que el tamaño de algunos bancos *too big to fail* deben ser encauzadas.

A este respecto la experiencia ha demostrado que la dimensión del sector bancario en relación al PNB se ha disparado en muchos países. Así por ejemplo en el Reino Unido se ha llegado al 700%, en Suiza al 650%, en Suecia al 350% y en Francia al 310%. Y ello sin mencionar las cifras escandalosas alcanzadas en Chipre e Irlanda, con las terribles consecuencias que ello ha comportado. En este sentido Suiza tuvo que salvar, en otoño de 2010, *l'Union des Banques Suisses* (UBS), aportando 6.000 millones de frs los cuales se han podido recuperar dado que el "banco malo" que se creó ha dado beneficios.

Si no se hubiera hecho esta intervención Suiza estaría hoy como Irlanda, que ha tenido que doblar su deuda pública para salvar su banca o como Islandia, que ha renunciado a pagar sus deudas con el corolario de problemas que ello ha supuesto.

En la reglamentación que Suiza ha introducido para prevenir el *too big to fail,* se plantea que si uno de sus grandes bancos cae, habría que proceder venderlo "a trozos". Sin embargo, para tratar de evitar descalabros de este tipo, Suiza ha aumentado sus exigencias de *core capital* de los bancos superando las exigencias de Basilea III, tratando de evitar que los aumentos de precios en el mercado inmobiliario a niveles inquietantes, puedan llevar a un sobreendeudamiento de las economías privadas como ha sido el caso en Japón, Estados Unidos, Gran Bretaña, Dinamarca y otros países. También en España.

En Suiza el BNS ha exigido que los bancos aumenten sus fondos propios hasta el 19% de sus activos ponderados por sus riesgos. Con ello se crea un colchón anticíclico de capital.

Un período apasionante

Tanto la economía como el sector bancario están atravesando, a nivel mundial, por un período apasionante durante el cual los bancos centrales deben estar cada vez más presentes debiendo afrontar, además, una serie de riesgos:

- Con la definición y publicación de expectativas con el riesgo de decepcionar,

- Verse sometidos a presiones, en general de carácter político, que les llevan a una cierta pérdida de independencia,

-Tener que someterse a la nueva prudencia que exige el mundo actual.

Todo esto conlleva a una interacción permanente entre estabilidad de precios y estabilidad financiera lo que obliga a introducir políticas innovadoras que, aunque a corto plazo pueden dar sus frutos positivos, pueden tener a medio y largo plazo efectos secundarios, hoy, difíciles de evaluar.

Cuando desde el BNS vemos los efectos de la pérdida de soberanía monetaria de los países de la eurozona, las discusiones entre medidas de austeridad o de relanzamiento, la difícil gestión de las políticas fiscales en los países que deben compensar la falta de ahorro interno incentivando la entrada de capitales externos o el temor a una pérdida de la confianza en su deuda externa que experimentan países como España, Italia o el Reino Unido, nos damos cuenta de la suerte que tenemos en Suiza de disponer de un sistema bancario sólido y de un sistema de educación dual que evita el desempleo y permite la flexibilidad del mercado laboral. Es evidente que la consecución de los objetivos estatutarios del BNS es menos difícil que los que se les presentan a los bancos centrales de otros países.

El Sr. Jean-Pierre Danthine ilustró su brillante conferencia con la ayuda de una completa presentación gráfica, que reproducimos a continuación por gentileza de la Banque Nationale Suisse.

1. LA POLITIQUE MONÉTAIRE DURANT LA CRISE FINANCIÈRE

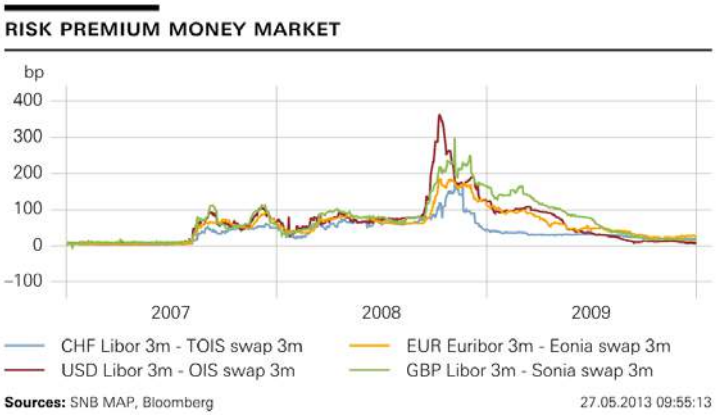
Tâches de la BNS

Loi sur la Banque nationale, art.5−

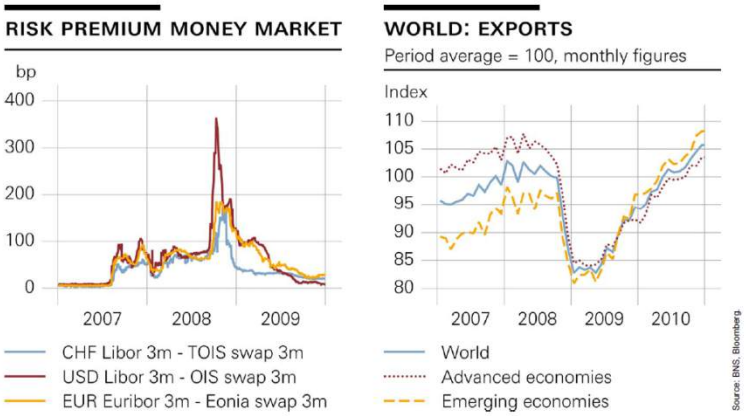
> −La a Banque nationale conduit la politique monétaire dans l'intérêt général du pays. Elle assure la stabilité des prix. Ce faisant, elle tient compte de l'évolution de la conjoncture.
>
> −Dans les limites ainsi fixées, [...] elle contribueà la stabilité du système financier.

2. GARANTIR LA STABILITÉ DES PRIX

Automne 2007: resserrement des conditions de crédit; la BNS stabilise le Libor à trois mois

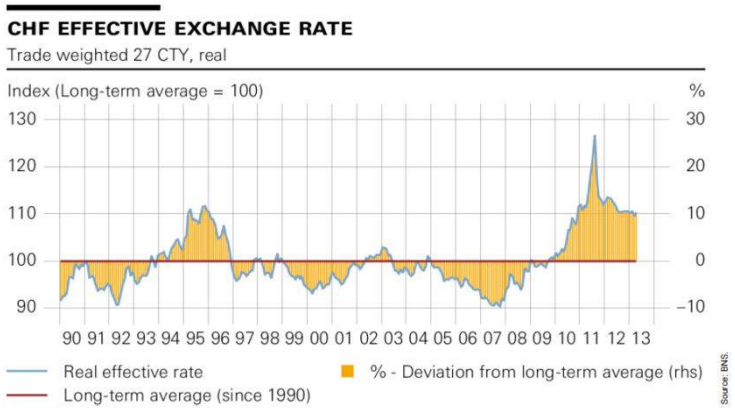


Automne 2008: effondrement de Lehman Brothers et contamination de l'économie réelle

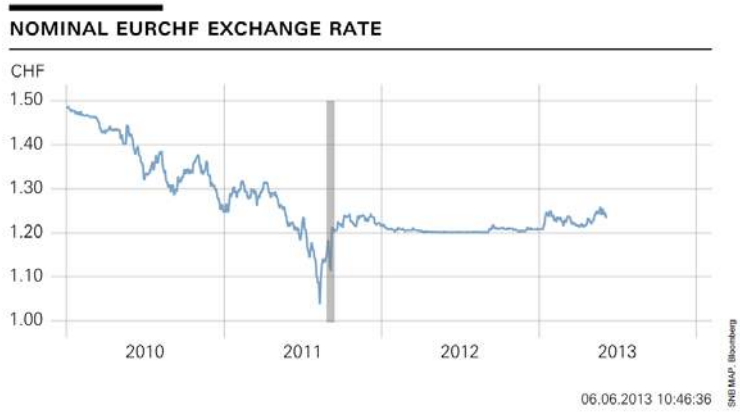


Réaction de la BNS: abaissement résolu les taux d'intérêt et mesures non conventionnelles

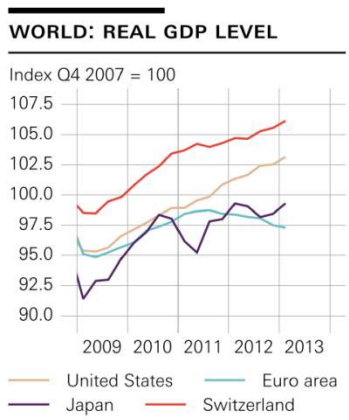
Le statut de monnaie refuge du franc menace l'économie nationale

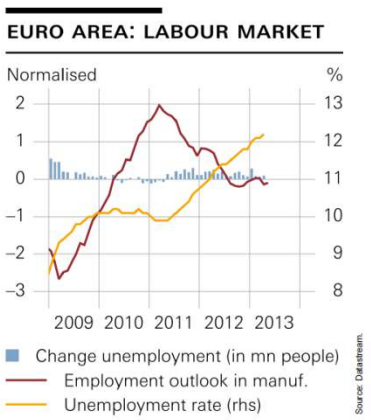


Importantes mesures d'assouplissement quantitatif et fixation d'un cours plancher



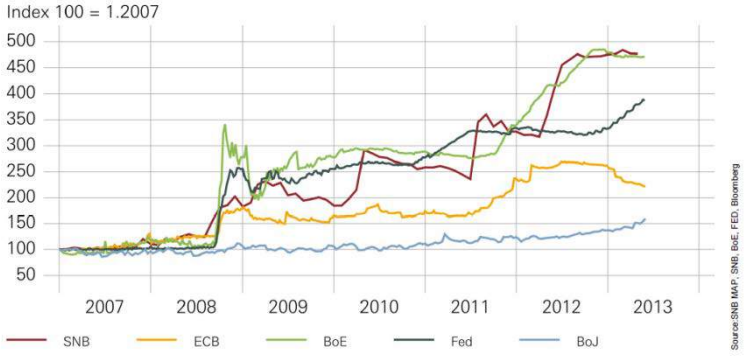
Actuellement, reprise mondiale lente et hétérogène avec risque baissier considérable





Accroissement notable du bilan

CENTRAL BANKS' TOTAL ASSETS



3. CONTRIBUER À LA STABILITÉ FINANCIÈRE

Enseignements généraux tirés de la crise

-Le risque systémique du système financier a été sous¬estimé.

-Une réglementation microprudentielle est insuffisante pour limiter le risque systémique.

-Une politique monétaire axée sur la stabilité des prix est insuffisante pour garantir la stabilité financière.

-Une politique macroprudentielle est nécessaire à titre complémentaire.

Approches classiques en matière de stabilité financière

Doctrine de Greenspan

-Pas de mesures pour prévenir les excès, mais des mesures agressives pour limiter les dommages. -Inconvénient: laisser les bulles éclater implique des coûts sociaux importants.

Leaning against the wind

-Limiter l'essor du crédit en relevant les taux d'intérêt.

-Inconvénients: peut compromettre l'objectif de stabilité des prix; inefficace pour inverser le cycle financier.

Politiques macroprudentielles: un nouveau paradigme

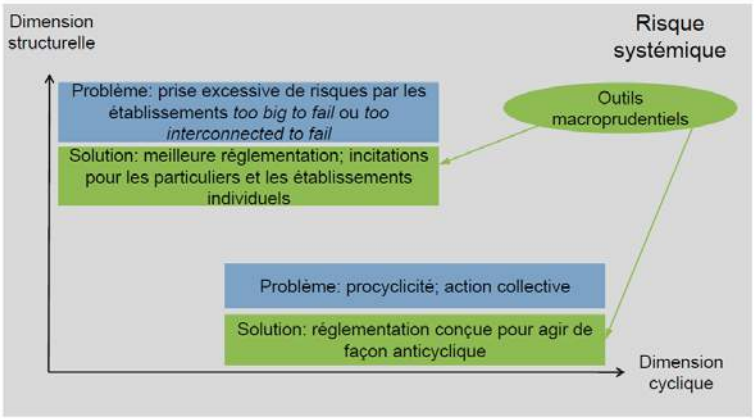
-Deux objectifs principaux: renforcer la résistance du système financier dans son ensemble et limiter la formation d'excès financiers.

-Politiques appliquées préventivement pour éviter les coûts sociaux de la doctrine de Greenspan.

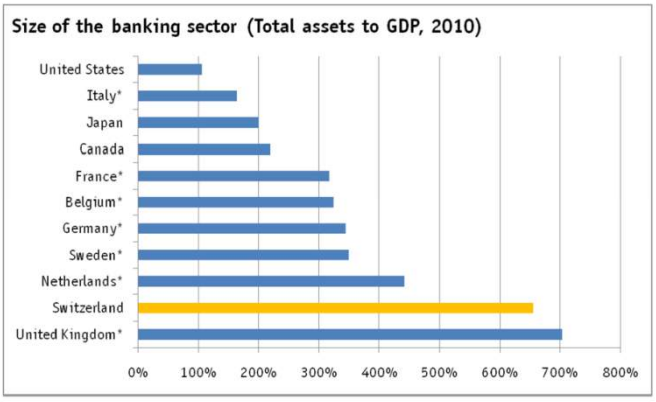
-Introduction d'instruments supplémentaires (en plus du taux d'intérêt) pour éviter que la stabilité financière soit assurée au détriment de la stabilité des prix (comme dans l'approche leaning against the wind).

-Interaction complexe avec la politique monétaire.

Les outils macroprudentiels s'attaquent directement aux sources de l'instabilité financière



Risque systémique de nature structurelle en Suisse: besoin d'agir

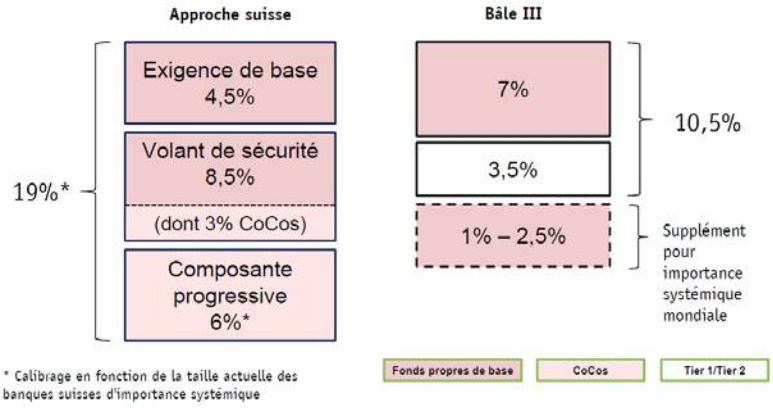


Sources: Association des banquiers japonais, Banque du Canada, Banque du Japon, Bankscope, BCE, BNS, FFIEC, FINMA, OCDE.

Risque systémique de nature structurelle en Suisse: objectif général de la réglementation too big to fail

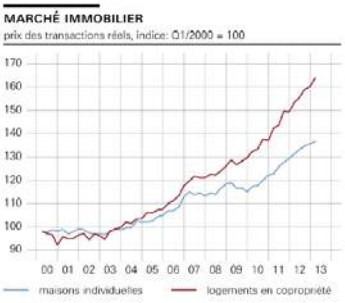
-Améliorer la stabilité des banques d'importance systémique pour réduire la probabilité d'une crise. -Eliminer le besoin de fonds publics en garantissant le maintien des fonctions d'importance systémique.

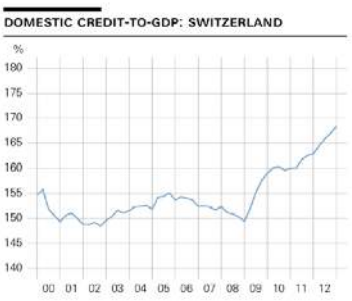
Fonds propres des banques d'importance systémique (en % des actifs pondérés par les risques): exigences suisses strictes, mais compatibles avec une approche mondiale



* Calibrage en fonction de la taille actuelle des banques suisses d'importance systémique

Risque systémique cyclique en Suisse: besoin d'agir





COMUNICACIÓN PRESENTADA

Con ocasión del Solemne Acto Académico
celebrado en Suiza, 7 de junio de 2013

Excma. Sra. Dña. Suzette Sandoz

LES SYSTEMES POLITIQUES ET FISCALES DANS LE CONTEXTE CONFEDERAL SUISSE

por

Dña. Suzette Sandoz[1]

Resumen de la conferencia pronunciada a los miembros de la Real Academia de Ciencias Económicas y Financieras de España en el Palacio Federal de Berna, Suiza, el 7 de junio de 2013.

Le système politique actuel n'a été mis en place qu'à partir 1848. Il lui a fallu quelque 650 ans pour se façonner. Deux notions fondamentales permettent d'en mieux comprendre l'esprit : une phrase du pacte de 1291 et la succession des traités entre les cantons.

I. Le refus des juges étrangers

Le pacte fédéral de 1291 entre les trois cantons fondateurs, Uri, Schwyz et Unterwald, est un document reproduit dans nos livres d'histoire et lu chaque année au premier août, en traduction. Il comporte cette phrase qui permet de comprendre la réticence du Pays à admettre une juridiction européenne : « nous n'accepterons pas de juge étranger dans nos vallées ». Cette idée « coule un peu dans notre sang » depuis sept siècles !

[1] Licenciée et docteur en droit par l'Université de Lausanne, ancienne professeur et doyen de la faculté de Droit de la même Université, madame Sandoz a été député au Conseil National, autrement dit, membre du Parlement suisse, pendant sept ans.

II. La construction successive du Pays par des traités.

Les treize premiers cantons ont été successivement unis les uns aux autres par des traités au contenu varié et signés parfois entre quelques cantons seulement. Ainsi, en 1332, les trois cantons fondateurs se sont alliés à Lucerne et, en 1351, ces quatre cantons ont conclu une alliance avec Zurich. Uri, Schwyz, Unterwald et Zurich, mais pas Lucerne, ont également conclu une alliance avec Glaris, qui n'était d'ailleurs pas traité sur pied d'égalité par rapport aux quatre autres cantons. Entre 1351 et 1513, sept cantons supplémentaires vont entrer dans un système d'alliances diverses avec les six autres, les derniers venus ayant avant tout des obligations militaires mais très peu de liberté pour conclure de leur côté des accords avec l'étranger. On exigera même des trois derniers venus, respectivement en 1501 (Bâle et Schaffhouse) et 1513 (Appenzell), de respecter une neutralité face à l'étranger.

Les treize cantons ont aussi des alliés tels que le Valais et les Ligues grisonnes et des traités de combourgeoisie avec les villes de Genève, Bienne, St Gall et Mulhouse ; enfin, les cantons de Fribourg et Berne ont des sujets (baillages) : Argovie, Thurgovie et Vaud.

Pour régler leurs affaires communes, les cantons ont une Diète, conférence d'ambassadeurs qui doivent en référer à leur gouvernement cantonal. Les décisions de la Diète se prennent à l'unanimité. Après la Réforme, il y aura même parfois deux diètes, une protestante et une catholique.

L'organisation interne de chaque canton est très variée : on note une oligarchie patricienne à Berne, Fribourg, Soleure et Lucerne, une oligarchie corporatiste à Zurich, Bâle et Schaffhouse, et une Landsgemeinde, assemblée de tous les citoyens porteurs d'une arme, à Uri, Schwyz, Unterwald, Glaris, Zoug et Appenzell.

Dès 1648, les cantons vont adopter une politique extérieure de neutralité.

III. De la Révolution française à 1848

De 1798 à 1803, sous influence française, la Suisse devient une République helvétique, très centralisée, dans laquelle les cantons ne sont plus que des circonscriptions administratives. On a ajouté aux 13 cantons d'origine Les Grisons, St Gall, Vaud, le Tessin, Thurgovie et Argovie. Etat unitaire bien que multiculturel, la République helvétique vit une période de désordre politique, religieux et culturel, si bien qu'en 1803, Napoléon, qui n'a aucun intérêt à avoir un « poudrière » sur son flanc Est donne à la Suisse une nouvelle organisation, « L'Acte de Médiation ». C'est une ébauche d'Etat fédéraliste avec 19 cantons organisés individuellement et une Diète centrale, sans grand pouvoir. C'est de cette époque que date le principe - encore valable aujourd'hui – selon lequel « les cantons exercent tous les pouvoirs qu'ils n'ont pas délégués à la Confédération ».

De 1815 à 1848, retour à l'ancien Régime. Le Pacte fédéral remplace l'Acte de Médiation et favorise une influence exclusive des cantons dont plusieurs connaissent une révolution libérale (vers 1830 : Régénération), puis plus radicale, dès 1845. La Suisse est faible devant les puissances étrangères et connaît des troubles religieux.

Cela aboutit à la création d'un véritable Etat fédératif, en 1848. La nouvelle constitution est acceptée grâce à un subterfuge arithmétique (les abstentions sont considérées comme des OUI). Dès cette date, les cantons perdent leur véritable souveraineté notamment sur le plan international et en matière militaire. On crée le monopole des postes, de la monnaie, des poids et des mesures. On supprime les douanes intérieures que la Confédération rachète aux cantons à qui elle paie une compensation annuelle. Il n'y a pas d'impôt direct fédéral, celui-ci restant aux cantons (sauf en 1849, pour couvrir des dépenses militaires). Le Parlement fédéral est bicaméral (comme maintenant) et le gouvernement, collégial (7 membres comme aujourd'hui). Le suffrage (masculin seulement) est universel. Il n'y a ni initiative ni referendum sur le plan fédéral. La neutralité est mentionnée dans la constitution.

La révision constitutionnelle de 1874 va permettre au Pays de s'acheminer vers l'unification du droit privé (unification du droit pénal en 1942 seulement !). Le Tribunal fédéral devient une Cour suprême permanente et le régime fiscal s'organise. La Confédération acquiert le

monopole des billets de banque dès 1891 et crée la Banque nationale suisse qui doit restituer une fraction de ses bénéfices annuels aux cantons.

IV. Régime financier et fiscal actuel

Le régime fédéral obéit aux quatre principes suivants :

a) La Confédération équilibre à terme ses dépenses et recettes (règle introduite depuis 2001).

Des exceptions sont possibles à cette règle mais purement momentanées et doivent être corrigées.

b) Elle ne peut prélever que les impôts qui sont énoncés dans la constitution fédérale.

La Constitution n'accorde à la Confédération le droit de prélever un impôt direct que depuis 1972, et ce, en en fixant le taux maximum et la durée. Actuellement, le taux est de 11, 5 % au maximum sur le revenu des personnes physiques et de 8,5 % au maximum sur le bénéfice net des personnes morales. En outre, ce régime fiscal n'est valable que jusqu'en 2020. Une nouvelle autorisation exigera un vote constitutionnel.

Le droit de prélever un impôt direct reste donc d'abord celui des cantons qui l'accordent aussi aux communes de leur territoire. En gros, on peut dire que la totalité de l'impôt direct frappant les personnes physiques appartient pour deux tiers aux cantons et aux communes et pour un tiers à la Confédération. L'impôt fédéral est très fortement progressif.

Pour fixer son tarif, la Confédération doit tenir compte de la charge constituée par les impôts directs cantonaux et communaux. Les cantons perçoivent l'impôt fédéral pour la Confédération et, en compensation de ce travail, gardent 17 % du produit brut (un peu moins en cas de péréquation financière).

En ce qui concerne la TVA, le principe, le taux maximum et la durée figurent légalement dans la constitution.

La Confédération a, selon la constitution, le droit exclusif de prélever des impôts de consommation spéciaux (monopole de l'alcool, tabac, autos, pétrole etc…) un droit de timbre, des droits de douanes, etc…

Elle prélève une redevance sur la circulation des poids lourds ainsi qu'une taxe d'exemption de l'obligation de servir, fixée et perçue par les Cantons qui peuvent garder 20% du produit brut.

b) Il existe une harmonisation fiscale entre les impôts directs de la Confédération, des cantons et des communes (depuis 1990).
L'harmonisation fiscale en matière d'impôts directs entre Confédération, cantons et communes comprend l'assujettissement, l'objet et la période de calcul, la procédure et le droit pénal fiscal, mais ni les taux, ni les exonérations.

La Confédération peut légiférer pour lutter contre l'octroi d'avantages fiscaux injustifiés.

c) Une péréquation financière est prévue entre la Confédération et les cantons ainsi qu'entre les cantons entre eux (depuis 2005/8).
La péréquation financière a notamment pour but de réduire les disparités entre les cantons, de garantir une dotation minimale en ressources, de compenser les charges excessives géo-topographiques ou socio-démographiques, de favoriser la collaboration intercantonale et de maintenir la compétitivité fiscale des cantons à l'échelle nationale et internationale.

La péréquation est financée par les cantons à forte potentialité de ressources et par la Confédération. Une loi très complexe en règle les modalités soumises au demeurant à un contrôle parlementaire et à une appréciation tous les 4 ans.

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