


Safety and Security



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Comentarios sobre seguridad hidrológica

1.- ¿Sabemos con certeza jurídica
cómo hemos de aplicar nuestros
conocimientos técnicos?



Jornadas
Españolas
de
Presas

El Reglamento lo expresó como “riesgos asumibles”, pero sigue quedando sin dilucidar **quién** establece esa “aceptabilidad”.

Sabemos quién **no** debe establecerlo: El técnico proyectista.

La sociedad, mediante sus instituciones representativas es la que tiene la legitimidad de aceptar un riesgo o establecer su nivel, para la consecución del Interés General. Necesitamos una **Ley** de que regule el criterio de riesgo aceptable en las infraestructuras.

COMPORTAMIENTO Y SEGURIDAD

RIESGOS ACEPTABLES

Valencia 1996

23 - 25 abril

Artículo 11.- Avenidas a considerar.

11.1 *El criterio básico para la selección y la determinación de las avenidas de proyecto será el del riesgo potencial asumible.*

...

11.3 *En función del riesgo potencial asumible durante la fase de construcción de la presa se determinarán las avenidas a considerar en el proyecto de los desvíos provisionales y órganos de desagüe. Se tendrá en cuenta, necesariamente, la distribución de frecuencias de las avenidas según los meses.*

2.- ¿Cómo articular la voluntad social?



Presidencia de Vilamarxant: Participación ciudadana, 2006

Heavy reasons to promote public participation; most of them can be put under subjective discussion: (after Skeffington, UK, 1969)

- Public participation processes provide **more efficient management**, thus actions would be carried out better if the affected people were involved.
- Long-term **sustainability** of a project would be more **warranted** if the involved people have participated since early stages. Participants could be considered themselves as an essential factor in final result.
- Gained **legitimacy** if people's concerns and opinions are taken into account.
- **Problem comprehension** becomes deeper sharing analysis with local agents due to their know-how and local knowledge. It must be stated that problems can be formulated from very different points of view.
- It's possible to **anticipate absolutely unacceptable proposals** saving time and cost.
- Participants can **update their prior positions** having access to clear information and arguments during the process. At the end is too late and perhaps some unreasonable reactions can be set up.
- Other than initial actors can be found during the process allowing that new unconsidered inputs or **hidden factors** can be identified.

Some learned lessons

- Lack of **implication** of potential **benefited** people who trust that the administration promotes the solution of its interests. Most of the cases, public participation is held looking for legitimacy of those proposals that have not been made with that opened starting position.
- **Equity in costs and benefits** means to know **externalities** that need very complex and not agreed procedures. For instance, gained value of the land after flood control schemes.
- It's absolutely necessary to gain **credibility** from stakeholders and that is only possible believing in the process yourself. Playing the role of a fair **arbitrator** between confronted positions and not trying to defend just a proposal means to believe in the public participation as a democratic tool more than on your own criteria.
- **Transparency** and well defined rules and calendars are also essential as well as the knowledge "a priori" of the range of possibilities, boundary conditions and the scope of the discussion. Too wide scopes, larger than permitted, can be interpreted as promising possibilities that once have to be rejected become in **frustration**.
- However, there will be always who remain frustrated, including those *who for each solution find a problem*.

Timing

The **beginning** of the public participation in projects is, very often, **too delayed**. Moreover, if main planned decisions are taken, it can be interpreted as a deceit. The waste and frustration of Decide-Announce-Defend must be avoided (CLG, 2006).

However, at very **early stages**, conscience on the potential affections does not awake and **reactions do not take place**.

Also, it must be said that real benefits and costs, including externalities, are very difficult to estimate at that early phase.

See: European Directive on the Environmental Assessment of Plans and Programmes



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3.- ¿cuál es el estado de salud de la ciencia hidrológica?

- Presas existentes
- Nuevos proyectos

PRIMERA POSIBILIDAD

- Evaluar el daño potencial a priori o *riesgo potencial* por rotura. Clasificar la presa.
- Establecer un criterio de selección de la avenida de proyecto y extrema en función de ello (Guia tecnica).

Establecer el grado de autodefensa de la presa para evitar daños a terceros en caso de rotura

Técnica vigente

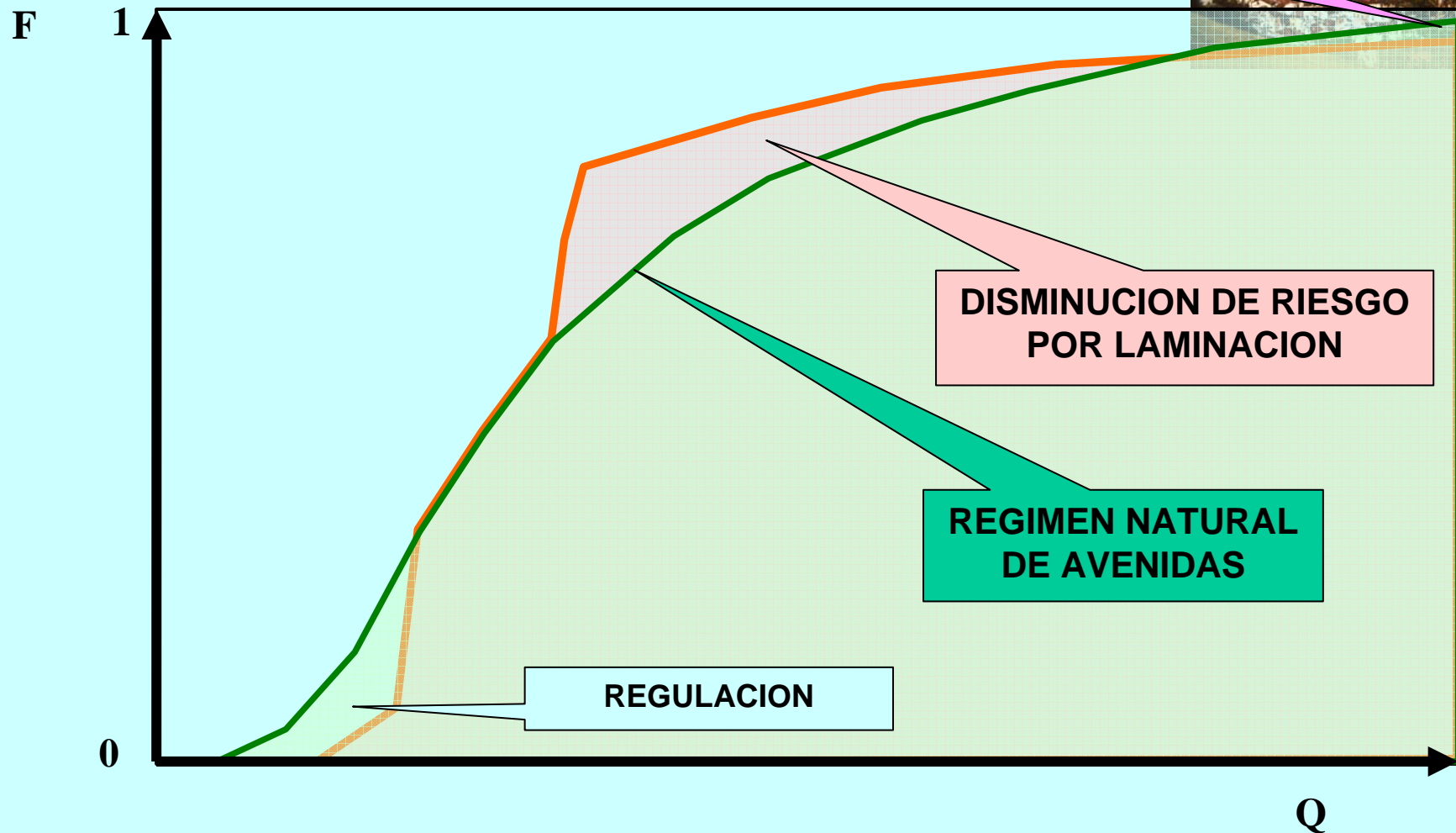
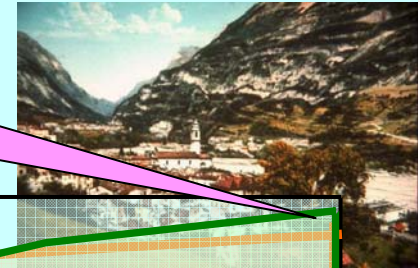
OTRA POSIBILIDAD

- Evaluar el daño potencial a priori o *riesgo generalizado natural*.
- Evaluar la modificación del riesgo que implica la presa bajo diferentes posibilidades de diseño
 - Establecer un criterio de selección de las *avenidas* de proyecto en función de ello
 - Proyectar sus elementos de desagüe en consecuencia

No solo establecer el grado de autodefensa de la presa sino evaluar su papel o impacto en el riesgo y su *aceptabilidad*

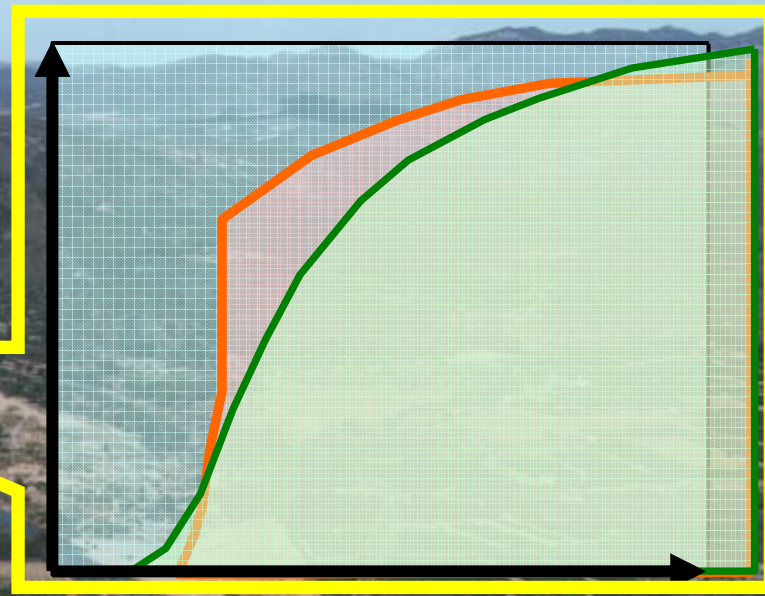
**RIESGO IMPUESTO ROTURA
POTENCIAL***

*no solo por riesgo hidrológico



I-Modificación del riesgo

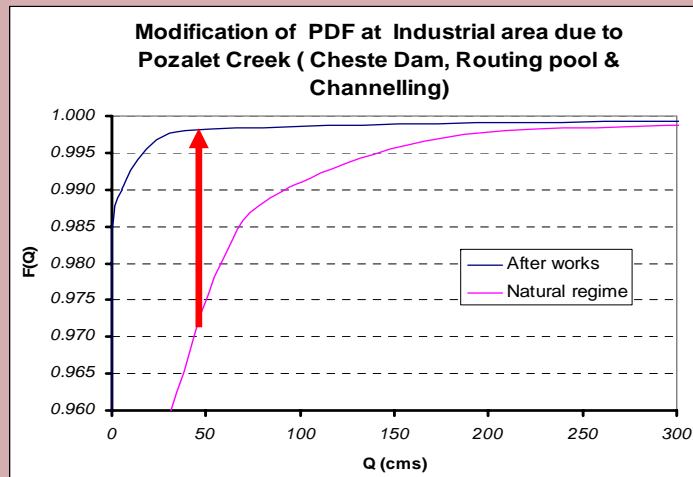
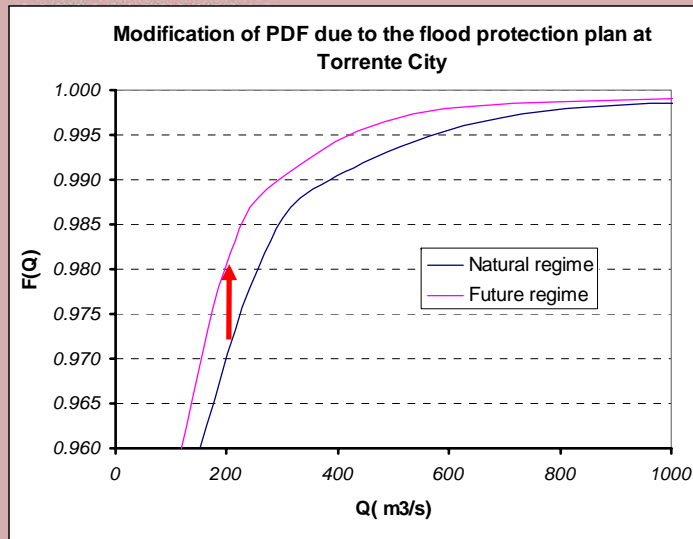
Diferente
en cada punto
de la cuenca



$$\int_{\text{Todo_el_río}} \text{Daño}(q, y(q), v(q)..) f(q) dq$$



Montréal 2003

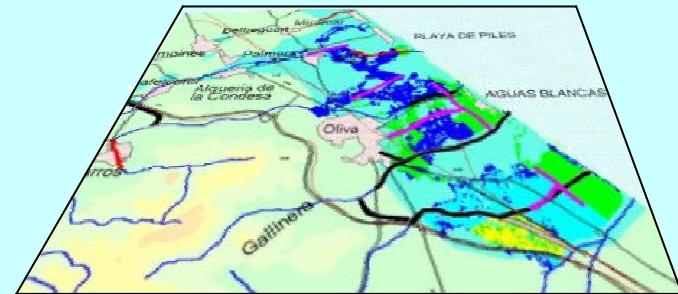


Peak Flow (cms)	Return Period (years)	
	Natural	After works
152	25	41
255	50	74
387	100	157
810	500	1770





4.- ¿Es posible
comerciar con el
riesgo?



5.- ¿Se tiene el control de todos los elementos de decisión involucrados?

- Órganos de decisión
- Evolución futura
- ..incertidumbres





Gracias por vuestras críticas