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Strategic Environmental Assessment as an instrument for external environmental integration

Case Studies in waterway planning
at the river Elbe and the San Francisco Bay



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Elbe at the Havel junction



Source: WWF/NABU/Euronatur/BfN, 1996, S. 12

Strategic Environmental Assessment as an instrument for external environmental integration

Abstract

The integration of environmental considerations into other policy fields ("external integration" and "integration requirement") is an ongoing challenge not only in Europe, which will increase in the course of tackling sustainable development. Among the planning instruments in Europe the cross-sectoral EIA has been implemented since its introduction in 1985. As opposed to the US NEPA it is only applied to concrete projects. In 1996 the European Commission had issued a proposal for a Directive for environmental assessment of plans and programs ("Strategic Environmental Assessment" / SEA) which would widen the scope of application to earlier stages of decision-making.

By investigating two case studies on waterways, one in California with SEA and one in Germany without SEA, the normative deficiencies and actor-specific obstacles currently inhibiting external environmental integration were identified. Waterways reveal the need for integration in a special way: they are a means of transportation and are also part of the natural environment. This situation becomes even more difficult because they are considered as the most "environmentally friendly" means of freight transport, whereas the impacts of construction works mostly collide with environmental considerations or nature protection.

Those conflicting interests and objectives which may - at least initially - derive from divergent value and evaluation systems ("belief systems"). This situation is typical for complex planning procedures with future SEA application. To attain integration it is desired for the divergent belief systems to move towards one another.

The legal and actor-specific factors influencing the way, procedure and results of the decision-making processes in the two case studies were identified. Those results allow the deduction and discussion of planning principles relevant for SEA. On the basis of this analysis a concrete procedure for planning with SEA is suggested and implemented in the proposed Directive.

Three major principles for planning with SEA and at the same time for improving the process of convergence can be deducted from the comparison of the case studies: Self-reflection, transparency and process-orientation.

Self-reflection is most important one for gaining more congruent belief systems and thus integration. Both the obligatory consideration and assessment of alternative concepts, which is provided by the SEA-Directive, and the actual collaboration by the relevant sectors during the planning phase of sectoral plans with SEA enhance self-reflection. It is recommended to introduce "obligatory consensus" as procedural requirement. This proposal is grounded on the same rule already provided by the German constitution and the Federal Waterway Law, according to which it must be applied for waterways works and management if different interests like transport needs and water management are concerned. With this provision the constitution remarkably acknowledges that there is a need to divide decision-making power if two or more interests are concerned. This deliberation in fact applies to all relevant sector policies, if environmental integration is taken seriously and thus environmental concerns are considered as equally important as e.g. water management. Process-orientation reduces the complexity of the problem respectively the plan and hence can increase efficiency of planning. An iterative planning procedure with subsequent steps of decisions to structure and "tier" the process should be installed to achieve this. Transparency serves the building of confidence between actors from different sectors. This enhances both the readiness for self-reflecting and may diminish the risks deriving from self-reflection, which exist particularly within public administration: namely tending to gain certainty of knowledge before deciding.

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Case studies in waterway planning at the river Elbe and the San Francisco Bay

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Summary

The integration of environmental considerations into other policy fields ("external integration" and "integration requirement") is an ongoing challenge not only in Europe, which will increase in the course of tackling sustainable development. Among the planning instruments in Europe the cross-sectoral EIA has been implemented since its introduction in 1985. In contrast to the situation under US NEPA, it is only applied to concrete projects. After a longer period of paused debate the European Commission in 1996 issued a proposal for a Directive for environmental assessment of plans and programs ("Strategic Environmental Assessment" / SEA) which would widen the scope of application to earlier stages of decision-making.

The research work presented herewith aims at proving the need of SEA for improved integration of environmental considerations into planning of transport infrastructure. As in the case of the (project-)EIA the instrument SEA requires the discussion of problems of competence, jurisdiction and co-ordination processes within public administration organised in sectors. The selected research case "waterways" reveals the need for integration in a special way: they are a means of transportation and are also part of the natural environment. The fact that they are considered the most "environmentally friendly" means of freight transport further complicates the situation as the impacts of economically more or less required construction works mostly collide with environmental considerations or nature protection. As a rather exceptional feature in the German federal system a Federal institution with implementing tasks represents the main actor for waterways planning (Federal Waterway Administration, "WSV").

Two case studies are investigated in both of which the typical conflicts had occurred but which differed already in the chosen way of solution:

One case in Germany, at the river Elbe, in which the Federal Minister for Transport entered into a voluntary agreement with environmental NGOs about the installation of a working group with the Federal Waterway Administration. According to this "Elbe-Declaration" an overall concept for the controversial maintenance and construction works at the Elbe, which should integrate environmental considerations, was supposed to be worked out. Furthermore, the use of the Elbe-bypass-channel as an alternative route of transport should be investigated.

The other case took place at the San Francisco Bay Area, where conflicts had occurred between the US Army Corps of Engineers (a Federal administration comparable to the WSV), EPA, the Californian environmental and planning agencies Bay Conservation and Development Commission (BCDC), Regional Water Quality Control Board (RWQCB) and several environmental NGOs. The parties were in dispute over the preferred ecological or economical disposal of dredged material incurred through maintenance and construction works at waterways. The main variable in this case is that according to NEPA and CEQA an environmental impact assessment is also applied to plans and programmes. Such a "SEA" (Policy EIS/Programmatic EIR) was conducted for, and steered the established planning process "Long Term Management Strategy for the Placement of Dredged Material (LTMS)". It was aimed to develop "environmentally sound and economically feasible" options for dredged material disposal for the next 50 years by maximising beneficial reuse.

The different factors influencing the selected kind and course of the two decision making processes as well as their results were investigated in the research work. From the identified factors and a subsequent comparative analysis recommendations for a planning procedure with SEA were concluded.

Those influencing factors lie within the legal framework of jurisdiction, and of substantial and procedural provisions. In the German case conflicting issues can be found in all three groups of legal provisions. The ones currently inhibiting external integration are identified. In the California case the conflict rather goes back to implementation deficits and specific behaviour of actors whereas the normative and institutional framework rather supports the planning process.

The concept of policy-learning serves as a theoretical basis and starting point. It applies to situations where different actors have – at least initially - conflicting interests and objectives, which may derive from divergent "belief systems", i.e. a set of values and evaluation patterns. This situation is typical for the cases where SEA will be applied. Policy-learning is considered as essential for organisations – at least in cases with little or no trade-off possibilities - and comprises that those belief systems move towards one another. It is assumed that such a process of convergence is needed to attain integration. In addition to these basic deliberations, organisational theory summarised under "negative co-ordination", which explains co-ordination problems of sectorally organised governments, is reviewed and used for interpreting the cases. It is found that there are parallels in results of both policy-research and planning sciences: Both tend to recommend that for planning processes to be successful, they need to be process-orientated and need to include broad public participation. From the theoretical considerations a basic model for planning is deducted, which consists of four pillars that should ideally be balanced:

rational ∪ **spontaneous** ∪ **binding** ∪ **flexible**.

Figure 1: Opposite corner stones of planning

	Positive character	Negative character	
rational	Comprehensive information basis, limiting risks	Endlessly, paralysing, obstructing decisions	
	Innovative, creative, pragmatic, open	euphorically, arbitrary, irrational, unscientific	spontaneous
binding	Aimed, supporting security, reliable, long-term oriented	rigid, formalistic, too legally oriented, not adaptable	- incremental -
	adapted to problems, solution oriented, case related (may be + and -)	Crisis-like "muddling-through", no foresight	flexible

The case studies reveal:

Objectives are formulated in both voluntary agreements. In the German case the parties involved interpret the objectives in a different way: one side argues that an assessment of concept alternatives is included in the agreement whereas the other side rejects this view. The refusing WSV argues legally, referring to the binding character of the Federal Transportation Plan, and by stating that such decisions are political and not administrative ones. Because the agreement is of pure consultative character and because the objectives are not binding, the transport sector can dismiss a thorough investigation of e.g. the alternative Elbe-bypass-channel. It is not possible to question the objectives of the waterway sector. Nevertheless confidence is gained in the working group and for some, rather detailed, problems a convergence of – at least - evaluation systems takes place. The same effect could be observed in a related, previous case in which the Land Niedersachsen quite strictly requested

the WSV to apply the "obligatory consensus rule" for maintenance measures at the Elbe. The working group achieves a certain improvement in structuring the process, but there is only very little systematic consideration of impacts across the environmental media. The impact assessment hence does substantially, neither comply with EIA nor with the requirements of a SEA.

Implementation of the integration requirement in waterway planning in **Germany** is currently obstructed by the following factors which also partly prevented a process of convergence in the case Elbe:

1. Jurisdiction problems

The distribution of competence between the Federal administration, which (only) comprises waterways in their function as a means of transportation, and the Laender administration which comprises nature and environmental protection is an obstacle to integration. The fact that there are inherent tensions between Federal and Laender level about tasks and competence seems to increase conflicts which otherwise exist between the transportation sector and the environmental administration. An institutional alternative can not be identified in this research. The most promising way seems to expand the "common Federal and Laender tasks" according to Art. 91a (1) of the constitution. The current interpretation of the Federal administration, namely to be responsible only for "competing integrated environmental protection" and not for "precautionary environmental protection" is not appropriate and must not be maintained.

2. Substantial legal problems

a) The substantial problem of differentiating between maintenance and construction work is also statutorily not solved satisfactory. Maintenance works do not require a permitting procedure and hence they are not subject of EIA according to the German EIA law. It can be observed that there is the tendency to extend the definition of maintenance.

This situation reveals that the criterion "development consent" for the application of EIA (according to Art. 1 (2), Art. 2 (1) (2) EIA-Directive) is inadequate. Art. 3 (2) (a) SEA-Directive (common position as of 20.03.00) according to which a plan must "set the framework for future development consent of projects listed in Annexes I and II to Directive 85/337/EEC" is in the same way problematical. This requirement is also repeated in the cases covered by Art. 3 (3) and (4) SEA-Directive, for which a "screening" according to Art. 3 (5) has to be undertaken by the member states.

The analysis shows that certain types of maintenance works, at least those which are classified as "intensive maintenance", would likely have to be subject to EIA even under the current legal situation. Those types of maintenance works which are classified as "impact" under German Nature Protection law would have to fall under EIA-application. Taking all these cases into account it can be shown that SEA would have to be applied to the Federal Transportation Plan, to more detailed plans that are elaborated for each means of transportation, and for maintenance plans.

b) The considerations of environmental needs as provided in the Federal Waterway Law are also interpreted in a restrictive way. It is in general discussed controversially to which degree environmental needs must be taken into account according to these consideration rules (i.e. whether they are to be classified as "optimising rules" according to German planning law doctrine). In the waterway case the confining arguments also go strongly back to the distribution of competence (cf. above).

3. Procedural legal problems

§ 4 Federal Waterway Act determines "obligatory consensus" as procedural legal requirement for Federal and Laender administration for any measures at waterways if there are needs of water management or rural management concerned, a rule which is taken from Art. 89 (3) of the constitution. According to the analysis undertaken in the research work it must be concluded that nature and environmental protection falls under the term "rural management" (which has been discussed controversially up to now). This interpretation must be implemented explicitly (by listing it in § 4 Federal Waterway Act) or implicitly (by acknowledging the amended interpretation in regulations, directives and guidelines). This "obligatory consensus" rule represents a potential for better coordination of measures at waterways.

In **California** it was also a round table that failed, but for different reasons, namely because one party considered the process as having only consulting character and the assessment of alternatives as being deficient. Due to rather advantageous normative and administrative conditions the installation of a decision-making procedure called "Long Term Management Strategy of dredged material disposal (LTMS)" could be achieved. This procedure can be classified as a participatory one, because the parties involved settled that they will jointly decide upon the strategy to be identified.

The installation of the process, its proceeding and the final agreement were influenced by the following factors:

1. Cultural: Agencies consider themselves as a real actor in the political process

In the US, legitimacy of administrative operation is gained rather through extensive public participation and procedural law and regulations than solely through control by the parliament. Because the executive branch has also legislative tasks, functions of legal justification are delegated to the agencies as well. Extended procedural rules for administrative decision-making has made those actors familiar and practised in negotiations and performing public participation. The success of an agency is not only measured by reaching its own goals, but also by reaching results in negotiations about conflicting issues. Stronger standing rights for the States, non-governmental organisations and citizens represent a factor of power. Because of their stronger political role the agencies are given a greater flexibility, are to a lesser extent bound to programmes, which makes it easier to reflect on objectives and re-evaluate them.

2. Institutional

a) The different concept for the executive branch has lead to the installation of agencies for specific problems and hence more cross-sectoral ones. They may have competence for several concerns, even conflicting ones, which results in a generally stronger willingness and ability to collaborate and to more flexibility; hereby the latter rather refers to administrative culture than to a legal right. Both aspects support and facilitate the performance of SEA.

b) The existence of a Federal Agency for Environmental Protection (EPA) with implementing powers leads to environmental concerns being represented in a stronger way. All other effects of EPA go back to rules for common decisions on the Federal level (cf. paragraph 3 and 4).

3. Jurisdiction

The US Army Corps of Engineers (USACE) both implements sectoral law (water and waterways) and environmental law. Their internal rules and regulations provide a stronger consideration of environmental needs, which partly goes back to NEPA. The value system can be considered as more environmentally oriented, but nevertheless the conflict occurred and lead to a deadlock. It can be hence concluded that substantial law does not suffice, particularly for complex decision-finding. The situation that competence for certain tasks is shared with EPA provides starting points for collaboration, which were extended in the course of LTMS.

4. Procedural Law

There are more rules for vertical "obligatory consensus" and they are implemented more self-confidently and strictly, which goes back to a greater independence of the States and again to the special role of the agencies. In addition to these reasons the environmental agencies advocate their positions rather strictly because they can be indicted for non-compliance like other agencies. They may put pressure on negotiations by refusing to give their consent to a proposed measure. The inherent danger of this kind of power, namely to exert it as a blocking strategy, seems to be averted by the aspects discussed under 1. – 3.

5. Substantial law

Environmental law incl. NEPA and CEQA does not differentiate between maintenance and construction works. Whether a permission and consenting procedure is required depends on the significance of impacts. The problem of German law, namely whether maintenance and construction works are subjected to a consent procedure or not, is also irrelevant here, because an environmental permission is mostly required in addition to the sectoral permission.

6. EIA application

The broad scope of EIA application leads to critical screening of programmes, plans and projects with respect to their EIA relevance.

The discussion as to whether and how these influencing factors may be applied and/or amended in Germany results in the generally recommended to further develop mechanisms for co-ordination and common decision-making.

The following difficulties have occurred during LTMS, even despite of the rather advantageous overall framework:

- Uncertainty in the beginning about the requirement of NEPA-/CEQA application leads to delays;
- Determining the methodological approach and the definition and assessment of alternatives is a demanding and time-consuming task;
- there is the tendency to extend the scope of investigation and especially the range, number and scope of accompanying research studies. Early and repeated scoping may reduce this, as well as choosing experts from outside the respective region.

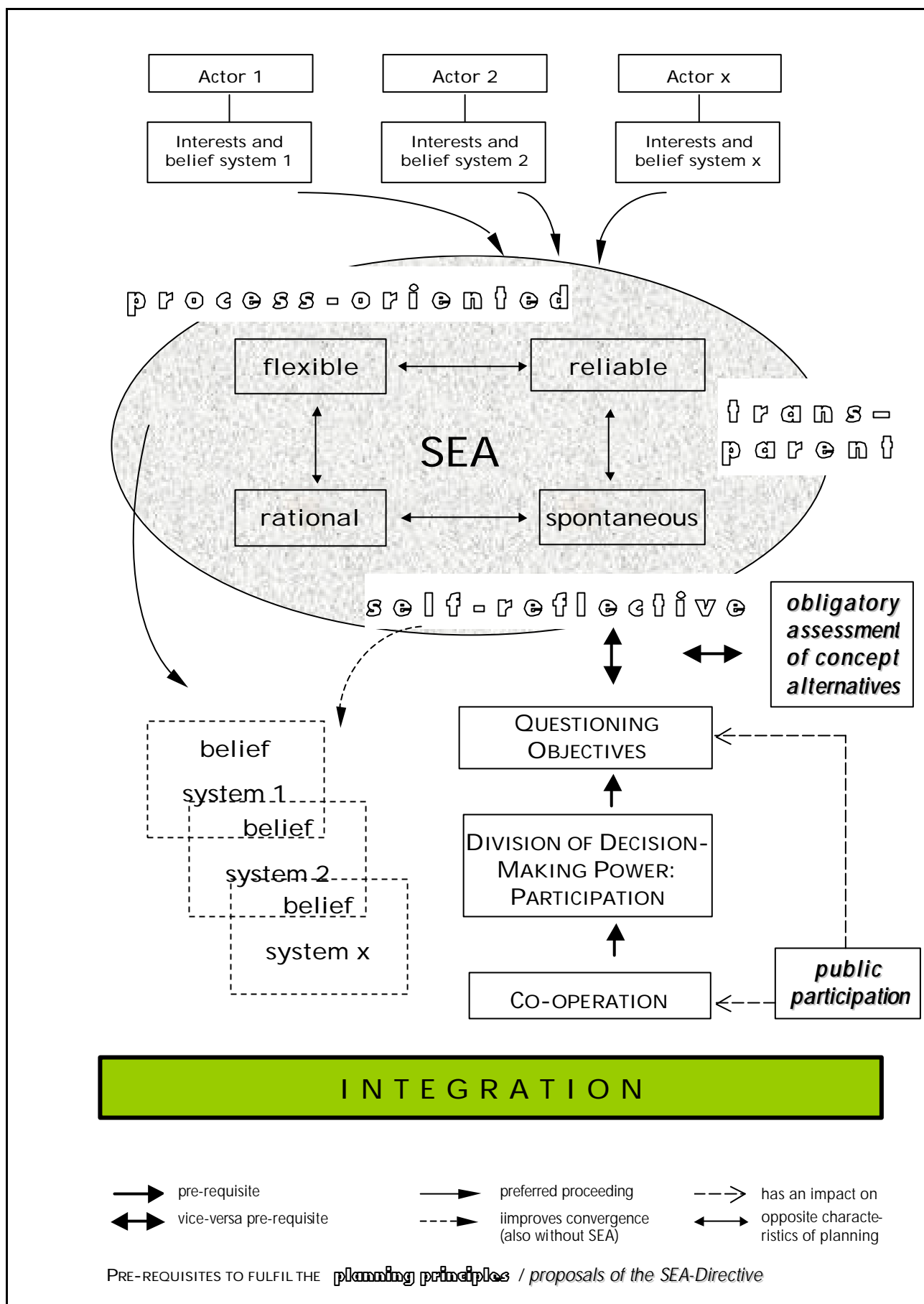
The conduction of "SEA" was overall appreciated, because the development of the report simultaneously steered the process. The herewith provided subsequent steps represent a structured guideline. (Re-)definition of alternatives, selection of the preferred alternative and different opinions become more plausible by transparently presenting arguments. A real collaboration of the different sectors by jointly elaborating the report improved both communication and the process of convergence significantly. By including the financial and administrative difficulties of implementing environmentally preferred alternatives in the scope of investigation the chance for their realisation was enhanced.

From the comparative analysis of the case studies three major principles for planning with SEA can be deduced: Self-reflection, transparency and process-orientation. Fulfilling all three of them improves the desired convergence of "belief systems".

- Self-reflection is most important for gaining more congruent belief systems and thus integration. Both the obligatory consideration and assessment of alternative concepts, which is provided by the SEA-Directive, and the actual collaboration by the relevant sectors during the planning phase of sectoral plans with SEA enhance self-reflection.
- Process-orientation reduces the complexity of the problem resp. the plan and hence may increase efficiency of planning. An iterative planning procedure with subsequent steps of decisions to structure and "tier" the process should be installed to achieve this. Subsequent common decisions mean several steps of consensus on subsequent levels which initiates the process of moving towards each other even if no congruence of belief systems is achieved. [*Process-orientation is the most important principle for improving the balance of the four pillars of planning (cf. Table 1)]. Process-orientation alone might lead to a negative version of "muddling through", namely losing the long-term orientation - a danger which is reduced by combining this principle with self-reflection.
- Transparency serves the building of confidence between actors from different sectors. This enhances both the readiness for self-reflecting and may diminish the risks deriving from self-reflection, which exist particularly within public administration: namely tending to desire to gain certainty of knowledge before deciding. This typically leads to inefficiency by conducting too many studies. Besides enhancing the democratic character of public planning, participation of civil society may improve self-reflection if the parties involved do have a real interest in constructively finding better solutions.

Those findings are included in a planning model (cf. Figure 1).

Figure 2: Endeavour or SEA in the magic quadrangle of planning



In Table 1 it is evaluated to which extend these planning principles are fulfilled in the two case studies.

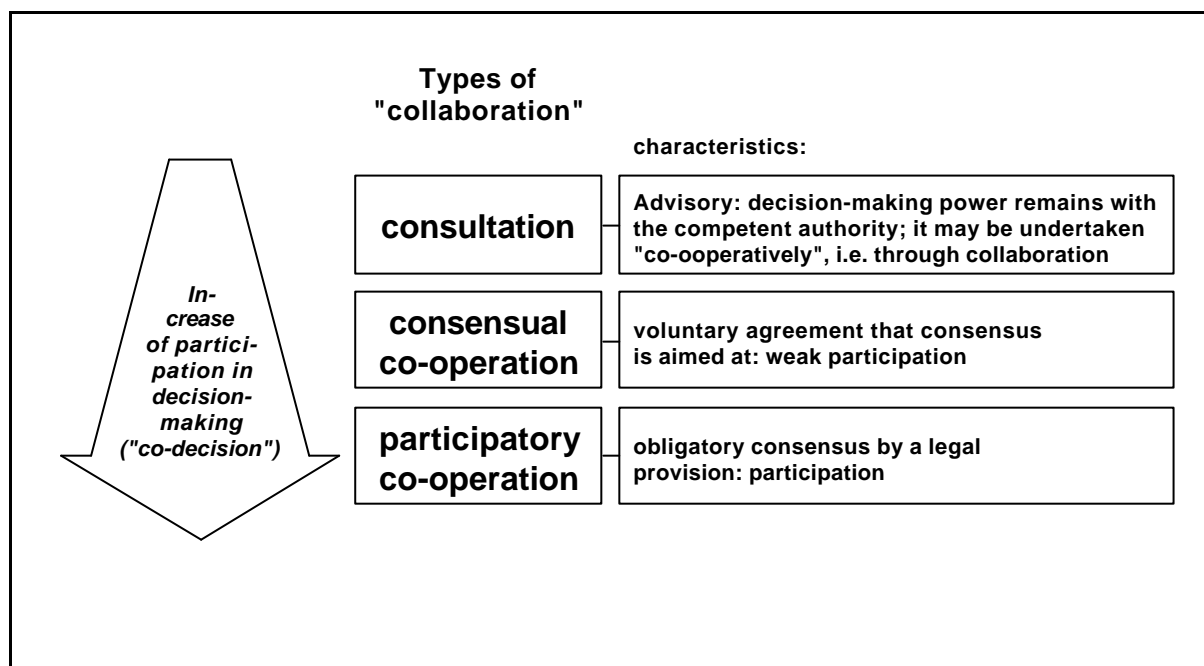
Table 1: Comparison of status and implementation of the planning principles to be fulfilled for SEA application in Germany and California

SEA planning principle	Germany	California
1. Ability for self-reflection	low: among other reasons, because of being strongly bound to programmes	high: among other reasons, because of relatively broad competence of administration for decision-making; cross-sectoral approaches
Influenced by: Degree of being bound to programmes	high: <ul style="list-style-type: none"> a "tiered" approach is common in the course of internal planning, but for external consultation the aspect of being bound is important self-reflection is considered as a risk for the "own" programme or a threat to the institution and is therefore avoided or rejected 	medium: <ul style="list-style-type: none"> sectoral interests, i.e. the own programme is advocated strongly, but the ability for "tiered" questioning is given and improved through procedural rules feed-back with federal institutions for support of the new strategy and to congress because of higher costs → both was required to solve the deadlock
2. Process-oriented and flexibility with the positive characteristics: problem-orientation	low: <ul style="list-style-type: none"> so far project-EIA: <ul style="list-style-type: none"> EIA(-report) for the existing scheme of the project assessment of alternatives does not include other concepts – if it takes place at all new SEA-Directive: <ul style="list-style-type: none"> environmental report for the programme/plan; assessment of alternatives (weakened again in the common position as of 20.03.00: Annex (b) provision is deleted); process-orientation was improved in the draft Directive 1999 and remained as such in the common position 2000: the results of consultation "shall be taken into account <i>during</i> the preparation of the plan ..." (Art. 8 common position SEA-Directive) 	high: <ul style="list-style-type: none"> broad application of NEPA and CEQA concept of tiered approach through several levels of planning internal "tiered approach" within PEIS/PEIR: subsequent definition of objectives and finding of means within (incl. implementation problems of the preferred alternative(s), like financing)
2.a) Tending to a negative form of rationality (*)	exists	exists, but at the same time there is also sensitivity to reduce this tendency ("need to structure the process, focus on alternatives")
3. Transparency and public participation	low (both within administration and regarding the public) <ul style="list-style-type: none"> so far project-EIA: <ul style="list-style-type: none"> voluntary scoping with voluntary consultation of NGOs consultation of NGOs and concerned public during the development consent procedure: taking opinions into account in the course of (legally provided) weighing up process/doctrine new SEA-Directive: <ul style="list-style-type: none"> consultation of the environmental authorities during scoping concerned authorities and concerned public may express their opinion on the draft programme and environmental report 	medium – high (for the investigated case: increase in the course of the process)

(*) "danger of endlessly collecting information" (Schink, NuR 1998, S. 174).

To conclude a desired way of collaboration of diverging groups of actors some terms in this field must be clarified: The main criterion to differentiate different forms of collaboration is the degree of participation in decision-making, which increases from "consultation" (e.g. commenting on a proposed plan) to several levels of "co-decision" to "participation" in the meaning of real division of decision-making power. "Co-operation" on the other hand means that real collaboration takes place and describes its kind ("co-operatively", i.e. constructively working together for a shared purpose). Participation hence means that consensus is reached. This may be agreed voluntarily, i.e. consensus is only aimed at, which implies the risk that this aim is given up later ("consensual co-operation"). Only in cases of decisions that legally require consensus this can not be done. Those cases are thus the only participatory ones according to the definition above. By relating them to the way of collaboration they are defined as "participatory co-operation" (cf. Figure 3).

Figure 3: Classification of consultation, co-operation and participation



After weighing up the advantages and risks of the two possibilities it is recommended to introduce an "obligatory consensus" rule as legal requirement for planning procedures with SEA. This proposal is grounded on the same rule already provided by the German constitution and the Federal Waterway Law, according to which it must be applied for waterways works and management if different interests like transport needs and water management are concerned. With this provision the constitution remarkably acknowledges that there is a need to divide decision-making power if two or more interests are concerned (related to the division of competence between federal level and Laender). This deliberation in fact applies to all relevant sector policies, if environmental integration is taken seriously and thus environmental concerns are considered as equally important as e.g. water management. The proposal hence undertakes the necessary substantial widening of this provision to also include environmental concerns and consequently applies it to the planning phase of measures. The obligatory consensus rule should include mechanisms for real co-operation, as defined above, and should be structured through subsequent steps of decision-making. Both aspects also apply to the situation that introducing such an "obligatory consensus" may not be reached in the law making process. Also for the weaker form of participation, defined as "consensual co-operation", the method of scoping must include the formulation of objectives and most preferably an agreement on objectives should take place. In the case of this form of participation, consensus shall be aimed at on each level of the planning procedure.

Co-operation ideally is performed in a working group comprising an equal number of representatives from the transport and environmental sector resp. the federal and Laender administration. Mainly because of practical deliberations public 'participation' (in the general meaning) should preferably be provided through one representative (or more, if appropriate) from non-governmental organisations. In addition to such a type of rather internal administrative collaboration other institutions and the interested (not: concerned) public should be consulted at certain planning phases.

As a result of the research the proposed SEA-Directive is scrutinised, and the relevant procedural provisions, which are deficient both regarding the optimal version of "participatory co-operation" and the weaker version of "consensual co-operation", are amended. Mainly relevant are Art. 5 and 6 of the proposed SEA-Directive. In case such detailed regulations don't lie within the competence of the European Union, the proposals are addressed to member states' governments, which may go beyond the provisions of a Directive, for that they succeed in transposing a future SEA-Directive in a way which advances the development towards complying with the integration requirement effectively and efficiently.

Berlin, 2000

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Title in German: Die strategische UVP als Instrument zur Integration
von Umweltbelangen in andere Politikbereiche

ANNEX to the "Excerpts": some selected Figures and Tables

Tab. II-1: Provisions of NEPA and CEQA with respect to application for plans and programmes

	NEPA	CEQA
1. Early application	<i>Agencies shall integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts.</i> (40 CFR § 1501.2)	<i>EIRs and Negative Declaration should be prepared as early as feasible in the planning process to enable environmental considerations to influence project program and design and yet late enough to provide meaningful information for env. assessment</i> (14 CCR § 15004 (b))
2. Scope of application, determined by:	All agencies of the Federal Government shall ... (C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on (i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented ..." (Sec. 102 (C) NEPA = 42 U.S.C. 4322 (C))	In order to achieve the objectives set forth in Section 21002, the Legislature apply to the use of environmental impact reports prepared pursuant to this division: (a) The purpose of an EIR is to identify the significant effects on the environment of a project, to identify alternatives, and to indicate a manner in which those significant effects can be mitigated or avoided. (P.R.C. § 21002.1); All lead agencies shall prepare ... an EIR on any project ... that may have significant effect on the environment (P.R.C. § 21100)
a) Definition of "major federal action" (NEPA) / "project" (CEQA)	<i>"Major Federal action" includes actions with effects that may be major and which are potentially subject to Federal control and responsibility.</i> ... <i>(a) Actions include new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies; new or revised agency rules, regulations, plans, policies, or procedures; and legislative proposals.</i> (40 CFR § 1508.18)	"Project" means any activity which may cause either a direct or a reasonably foreseeable indirect physical change in the environment, and which is any of the following: an activity (a) directly undertaken by any public agency, (b) undertaken by a person which is supported, ..., through contracts, grants ... from ... a public agency, (c) that involves the issuance of to a person of a lease, permit, license, certificate, ... for use by a public agency (P.R.C. § 21065) <i>b) Projects do not include: ... (2) Proposals for legislation</i> (14 CCR § 15378)
b) "significantly" (NEPA) / "significant effect" (CEQA)	<i>"Significantly" requires considerations of both context (... action must be analyzed in ... contexts such as society as a whole, the affected region, the affected interests) and intensity (severity of impact)</i> (40 CFR § 1508.27)	"Significant effect on the environment" means a substantial, or potentially substantial adverse change in the environment (P.R.C. § 21068)
3. Assessment of alternatives "heart of the EIS" (40 CFR § 1502.14)	<i>Agencies shall</i> (d) <i>Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources. This requirement of section 102(2)(E) extends to all such proposals, not just the more limited scope of section 102(2)(C)(iii) where the discussion of alternatives is confined to impact statements.</i> (40 CFR § 1507.2) <i>To determine the scope of EIS, agencies shall consider 3 types of actions, 3 types of alternatives, and 3 types of impacts. They include: ...</i> (b) Alternatives , which include: 1. No action alternative. 2. Other reasonable courses of actions. 3. Mitigation measures (not in the proposed action). (40 CFR § 1508.25)	The purpose of an EIR is ... to indicate alternatives to such a project (P.R.C. § 21061). <i>Die Guidelines gingen bis 1998 kaum über diese Bestimmung hinaus ("... to describe reasonable alternatives", 14 CCR § 15121(a). Die neuste Überarbeitung lautet "consideration and discussion of alternatives to the proposed project":</i> (a) <i>An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives</i> (b) <i>... even if [they] would impede to some degree to the attainment of the project alternatives, or would be more costly</i> (e)(1) <i>The "no project" alternative shall also be evaluated along with its impact.</i> (14 CCR § 15126.6; revisions, May 1998).

Note: NEPA is codified in 42 U.S.C., *italic citation indicate the NEPA-Regulations in 40 CFR*; the P.R.C. contains the CEQA-Statutes; 14 CCR indicates CEQA-Guidelines (*italic citation*).

Fig. III-3: Functioning of intact groins

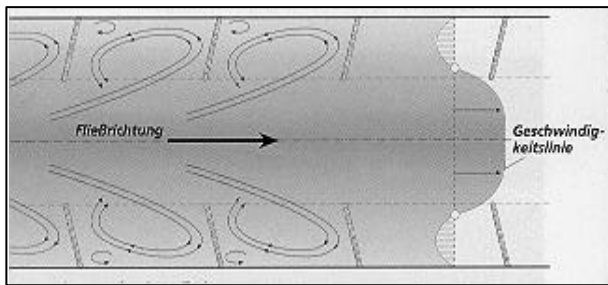


Fig. III-4: System of groins in aerial view: Elbe-section at km 477



Source (both Fig.): WSD Ost, o.J., Die Elbe - Strom und Transportweg. Broschüre

Fig. III-6: Repairing and rebuilding groins near Darchau



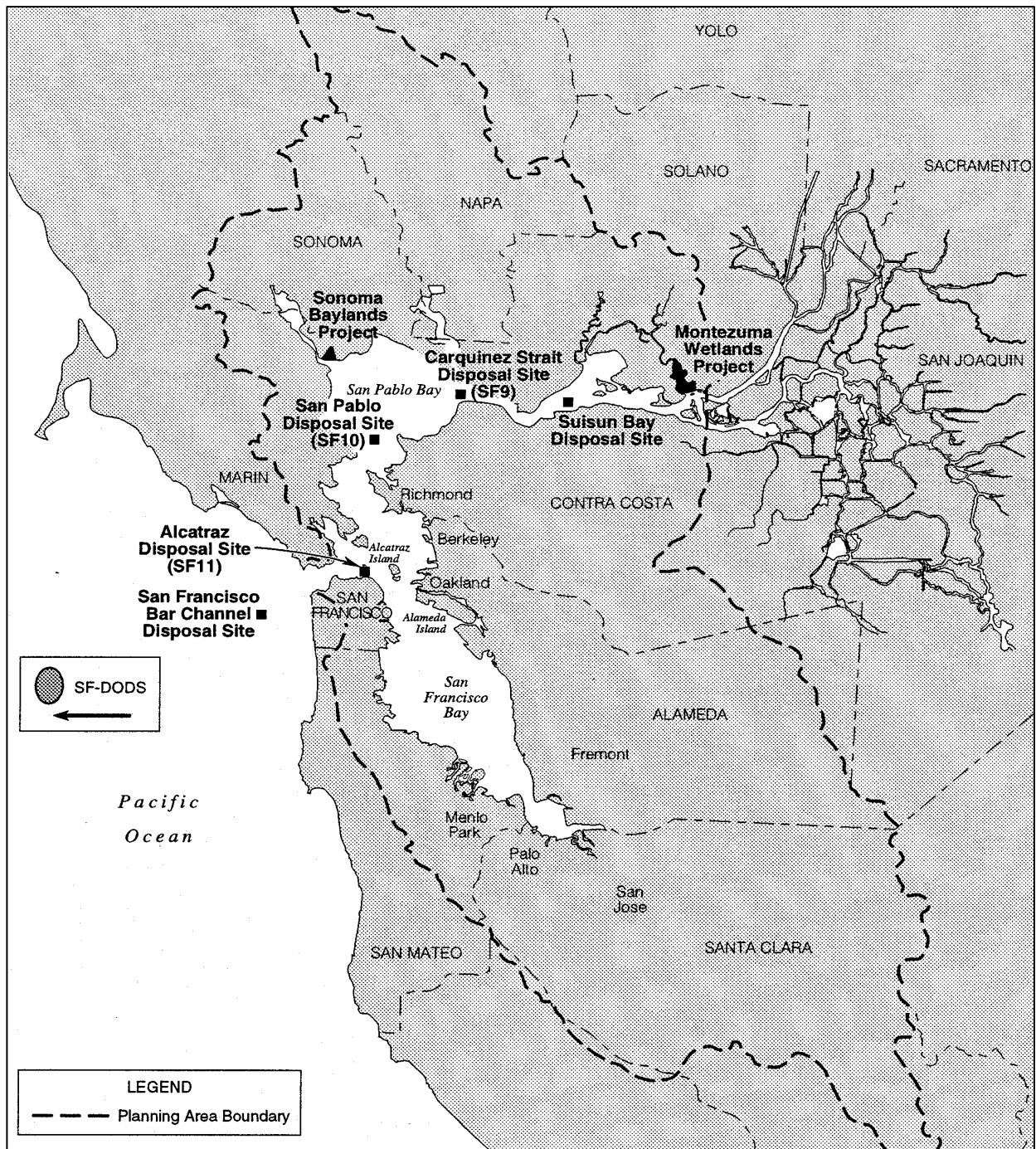
Source: WWF/ NABU/Euronatur/BfN, 1996, p. 17

Tab. III-1: Over view of the present "Belief Systems" in the fields waterways and environment

	"core beliefs"	secondary aspects, specific for the subsystem	views in detail
Transport	I. Economic growth is positive	1. Inland waterway transport is environmentally friendly per se; waterways are a natural means of transportation and should hence be improved and promoted	a) Alternatives like furthering logistics lead at a maximum only to partly improvement
	II. Anthropocentric view of nature; no awareness how nature protection can be of use for human beings	2. Efficiency determines the competitiveness of waterways: it is required to modernize them, to provide modern infrastructure	b) Vessels with low draught are only conditionally usable; in any case three layers of container must be provided, construction works at the Elbe are therefore necessary (bridges at the channel are too low)
	III. Volume of traffic is unavoidable (this "belief" is partly revised) and must be managed	3. A shift of traffic/transport can only be reached with modernized waterways, i.e. construction works at rivers	c) No restriction of navigation (e.g. during night time because of bird protection)
	IV. Direct measures (e.g. taxation) for traffic reduction are rejected (starts to be revised)	4. An increase in volume of waterway transport is expected (only) in the segment of container transport: only vessels for three layers of container are competitive	
Environment	I. It is doubtful whether economic growth should be considered as positive; cf. new definition of growth (ecological economics)	1. The evaluation of environmental friendliness as a means of transportation must include impacts on nature	a) Alternative solutions like improvement of logistics are to be furthered with priority
	II. An ecocentric view of nature exists partly (intrinsic value of nature); awareness and belief that nature protection is of use for human beings	2. The conservation of highly valuable habitats is of higher priority in certain river segments: transport on channels and use of existing (free) capacities (including railway) must be preferred	b) Research on vessels with low draught must be put forward
	III. Avoidance of traffic is of highest priority (is the main aim)	3. Shift of traffic/transport is improved through provision of a new pattern/management of infrastructure (partly also argued: through new construction)	c) Partly restriction for navigation is necessary
	IV. (Road) transport must become more expensive	4. It is doubted that the container transport segment will increase, as well as the "must" of three layers for being competitive	
Both	Shift of traffic/transport to railway must happen (there are different views within the transport sector)	Combined traffic must be furthered more strongly; competition between rail and waterway must be solved	

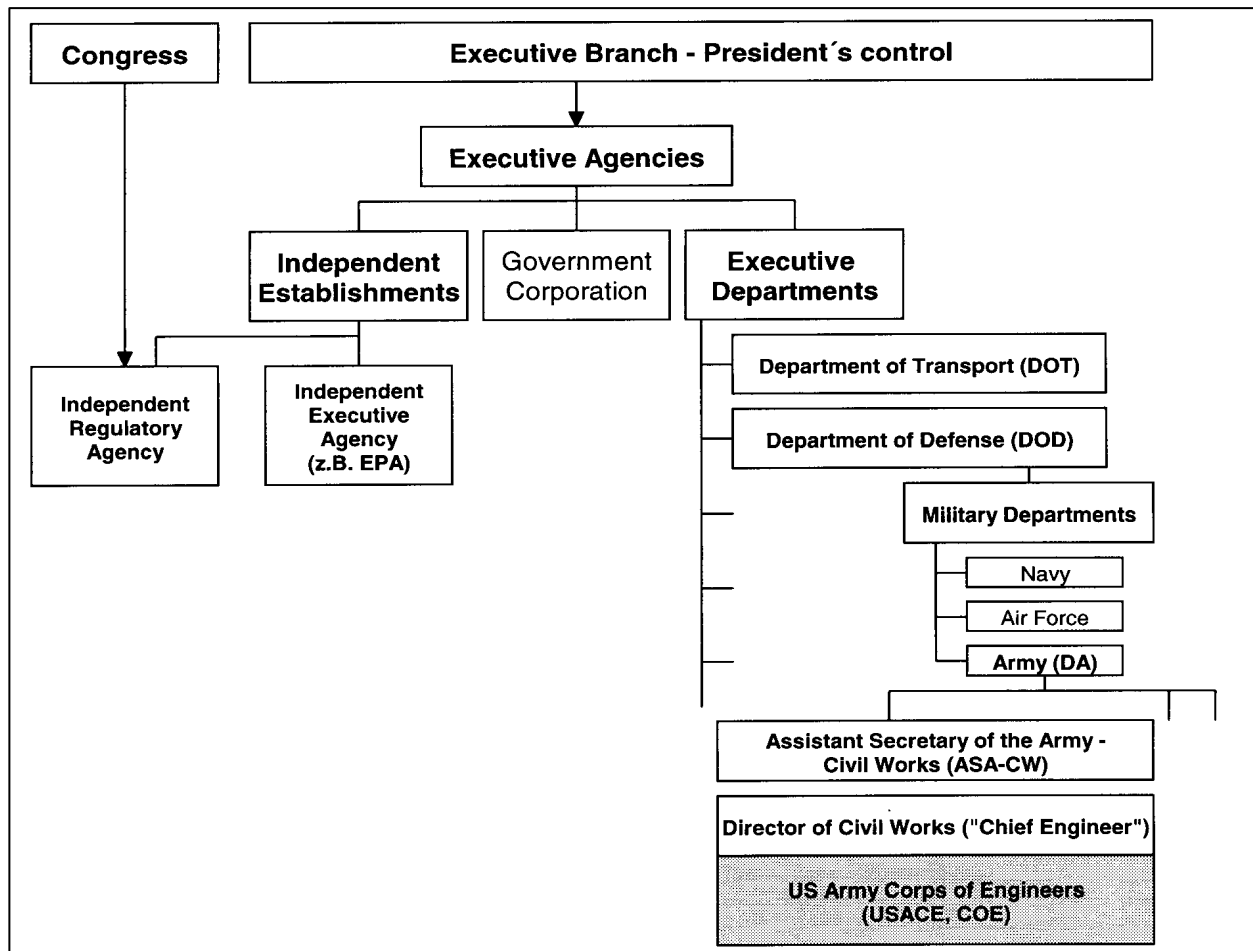
Compilation is based on *Sabatier* (1993, p. 132)

Abb. IV-1: San Francisco Bay-Delta Estuary: LTMS EIS/EIR Planning Area, administrative districts and existing disposal sites



Source: LTMS-PEIS/PEIR, 1998, p. 1-4

Fig. IV-2: Structure of the executive branch on the Federal level in the USA and position of the U.S. Army Corps of Engineers



Synopsis based on 5 U.S.C. Part I, The Agencies Generally, Ch. 1 Organization

Fig. IV-3: Administrative structure in the field of waterways and environment on the Federal level

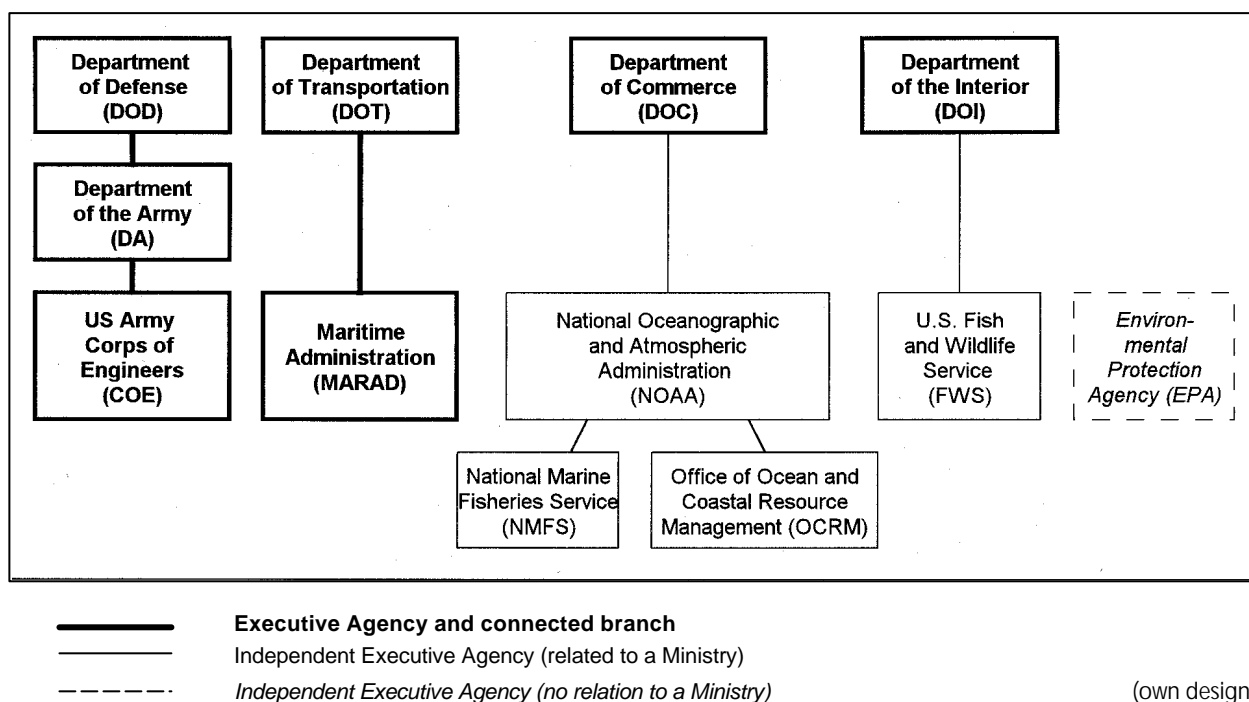
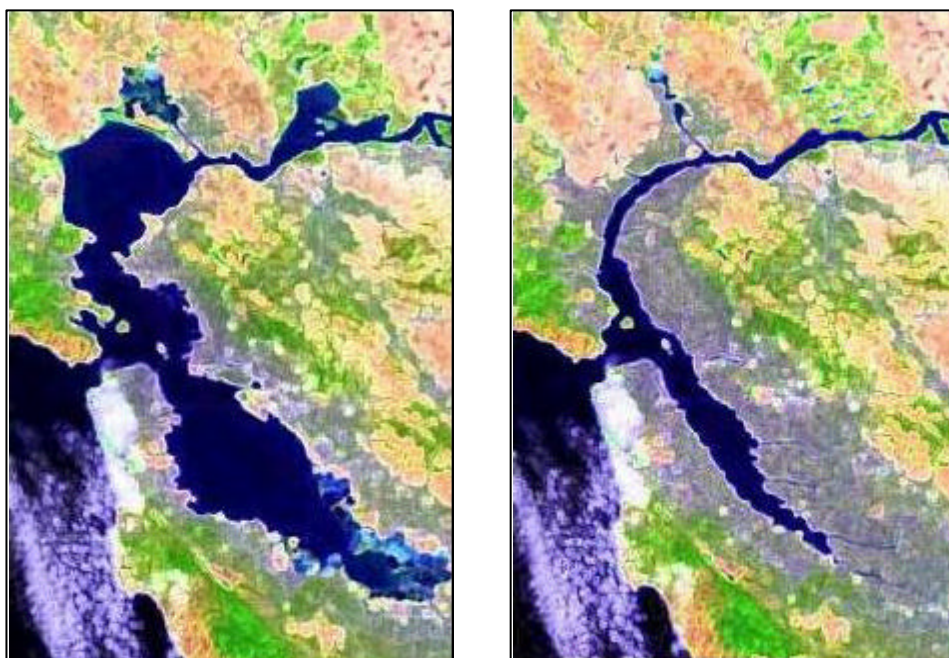
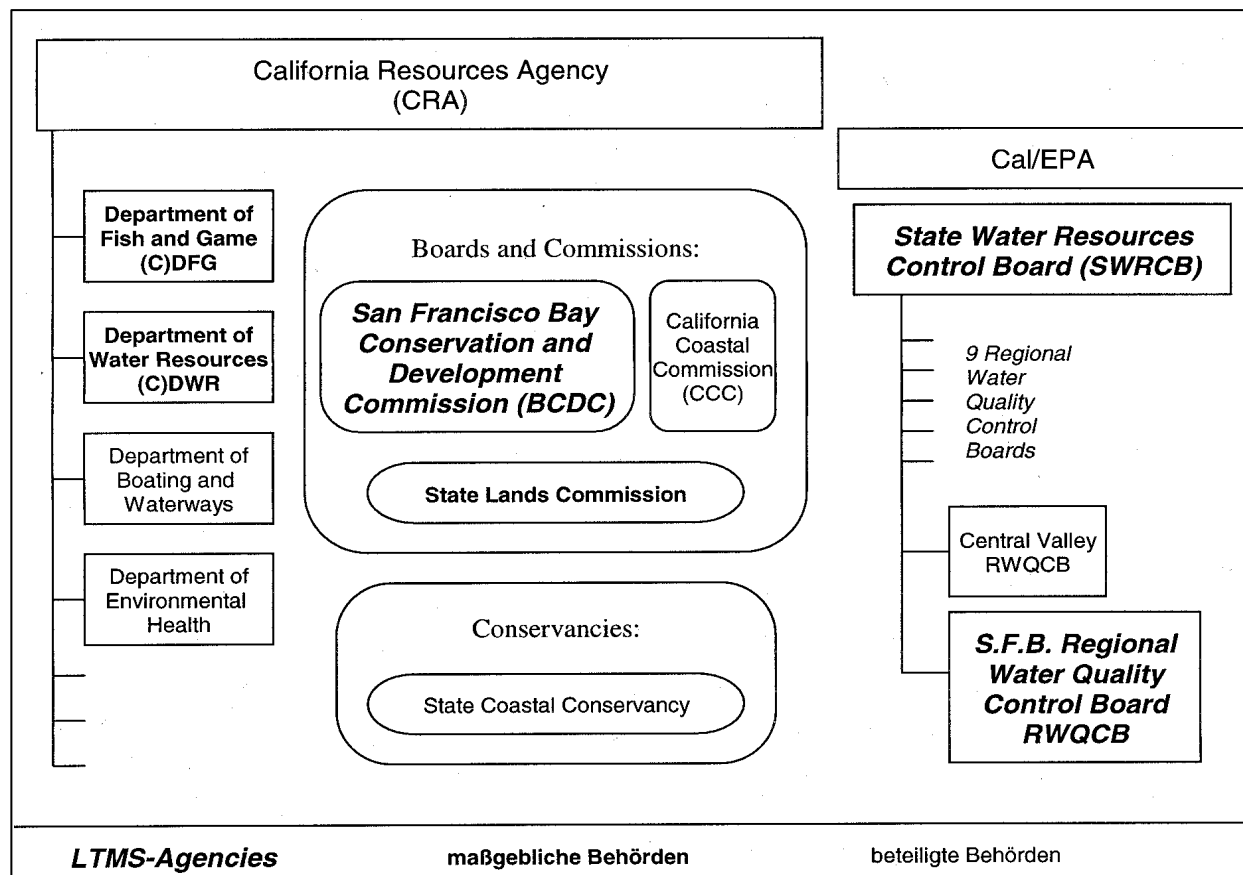


Fig. IV-2: State of the San Francisco Bay early 60ies and potential scope of bay fill



Source: www.ceres.ca.gov/bcdc/allink/allink.htm

Fig. IV-5: Administrative structure structure in the field of water, waterways and environment in the San Francisco Bay Area



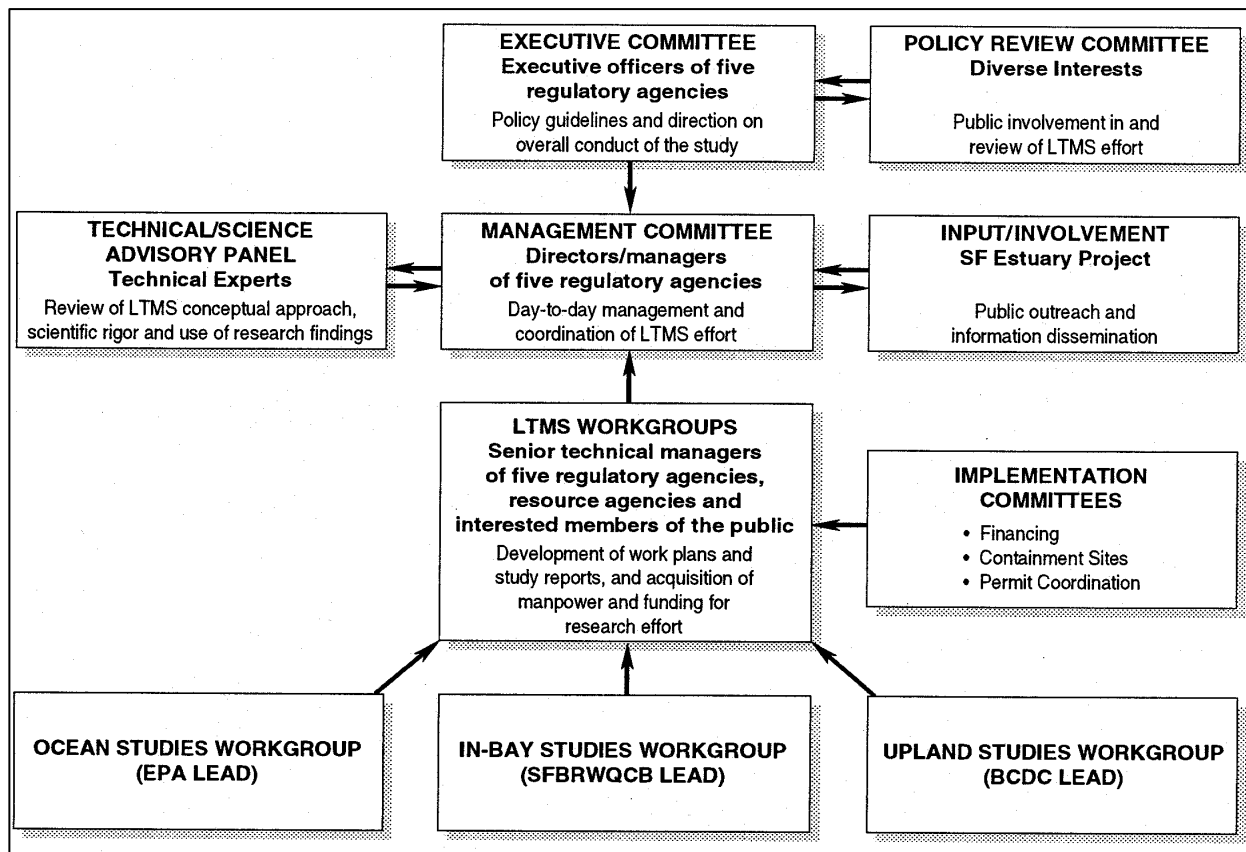
(own design)

Fig. IV-6: Press conference at Alcatraz disposal site (by "Save the Bay" Association)



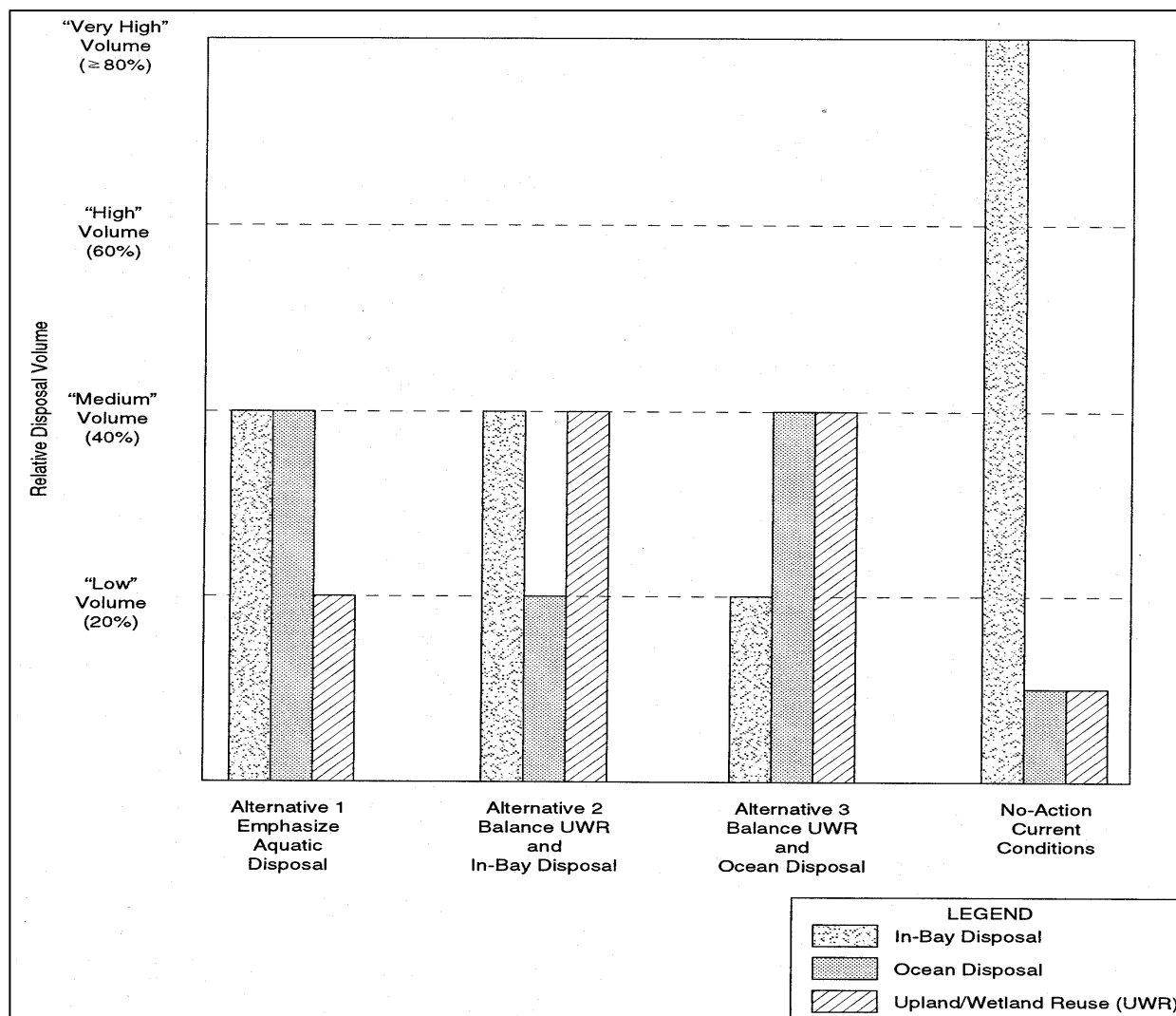
Source: Newsletter Watershed 1998, Save San Francisco Bay Association

Fig. IV-7: Organisational structure of LTMS



Source: LTMS-PEIS/PEIR, 1998, p. 2-5

Fig.. IV-8: Alternatives investigated in the PEIS/PEIR



Source: LTMS PEIS/PEIR, 1998, p. 1-10

Fig. IV-3: Sonoma Baylands Wetland Restoration Project



(own picture)

Abb. IV-11: Integrating CEQA with planning

Quelle: Bass/Herson/Bogdan, 1996, p. 16

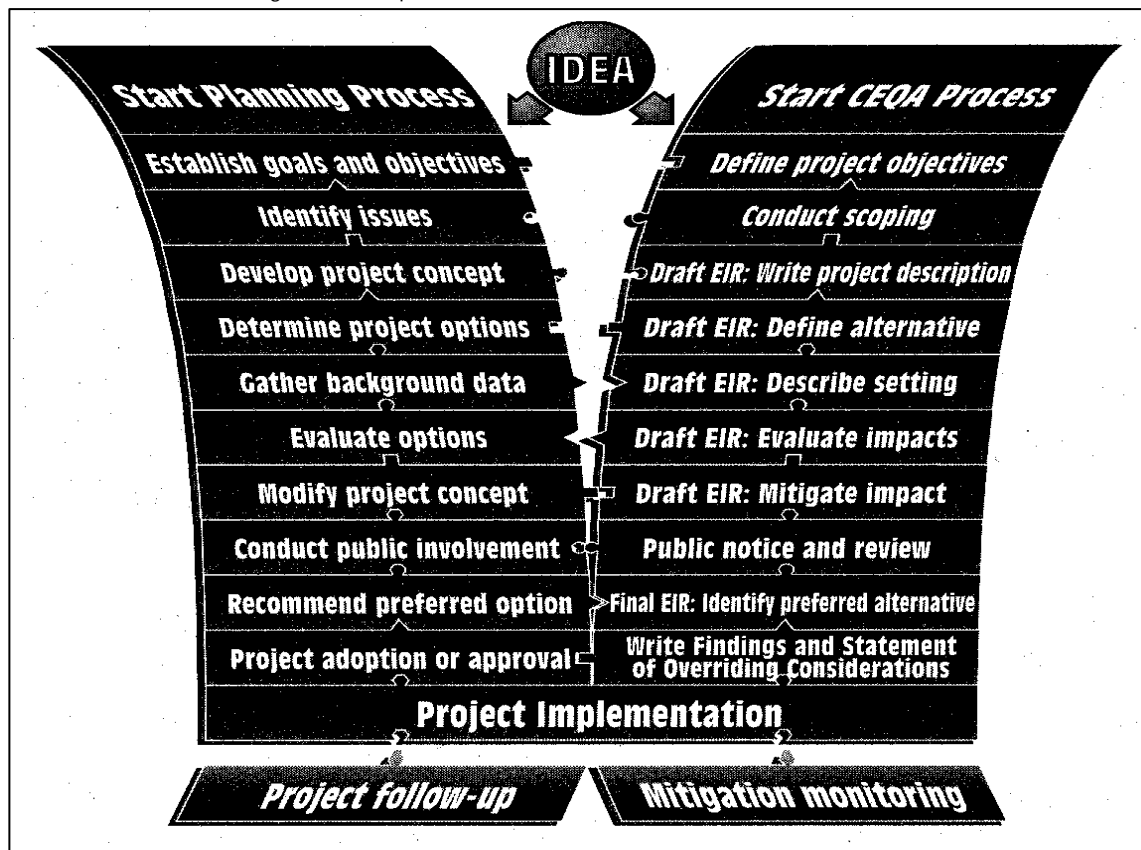
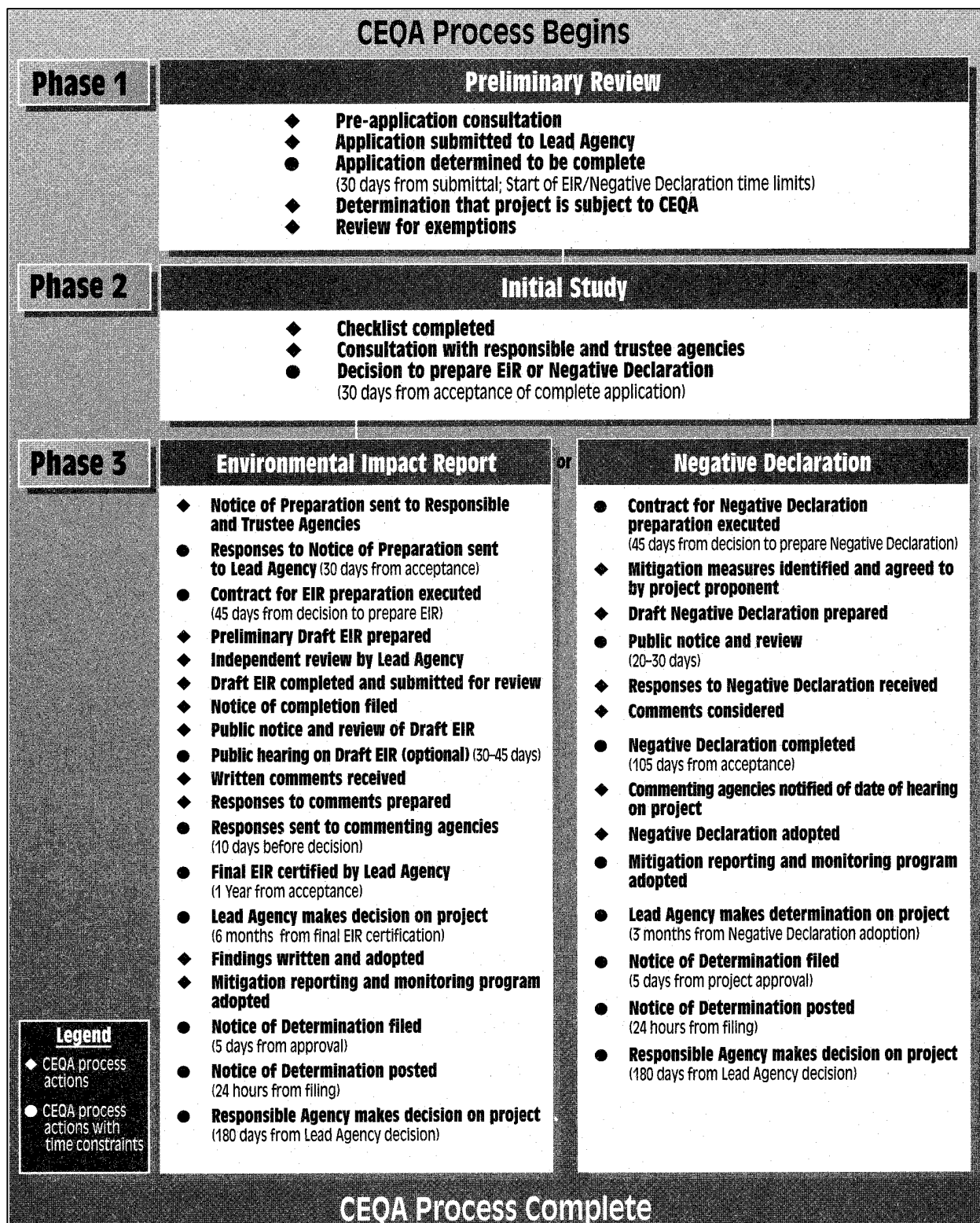


Abb. IV-12: Three phases of the CEQA-Process



Quelle: Bass/Herson/Bogdan, 1996, p. 18

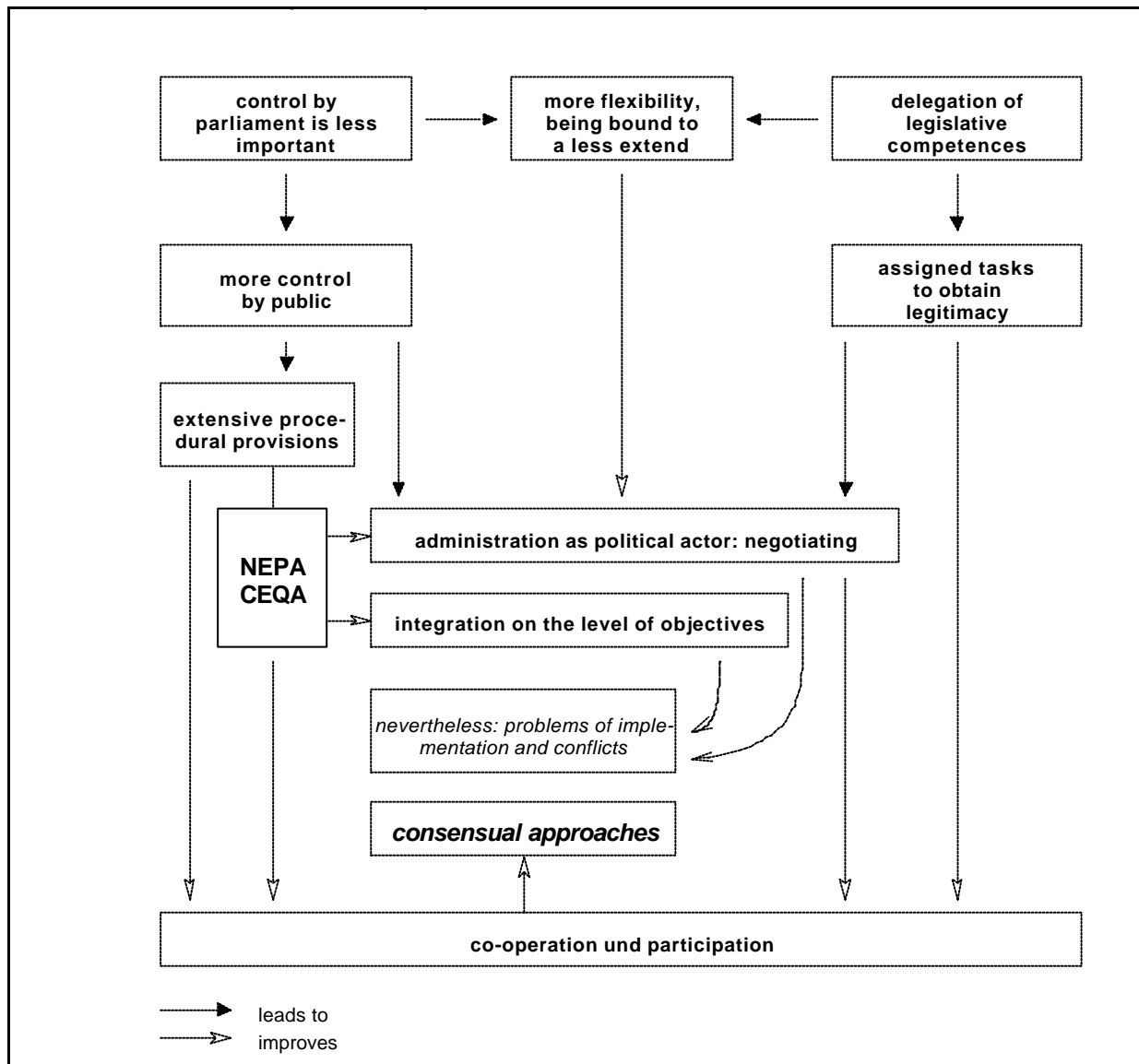
Tab. V-1: Comparison of the legal framework for waterways planning in Germany and the USA, respectively California

AUTHORITIES	Germany	USA/California
1. Federal		
1.1 Dredging	WSV Ü BMV	USACE, COE Ü DOD
Jurisdiction for dredging and waterway modification	Dredging and maintaining federal waterways according to § 45 WaStrG 1. Carry out projects of the BVWP 2. Conduct plan approval procedure (permitting) for (own) federal new work projects (§ 14 WaStrG) no permit required for maintenance dredging (§ 8 WaStrG) 3./4. No additional environmental permit for new work projects required 5. Conduct EIA and consider results	Dredging and maintaining navigable waters of the US according to Sec. 10 Rivers & Harbor Act (33 U.S.C. Sec. 403) 1. The basis for work is not an infrastructure plan, but Congress approves new work projects and cost-sharing provisions (bi-annual amendment of WRDA) 2. Sec. 10 permits for new work (and maintenance) projects 3. Sec. 404 CWA permits (environmental field): - disposal of dredged material in waters of the US 4. Sec. 103 MPRSA permits (environmental field) - transportation of dredged material to be disposed into ocean waters 5. NEPA conduction and compliance
1.2 Environment	a) BfN Ü BMU b) UBA Ü BMU c) BfG Ü BMV * d) BAW Ü BMV *	a) EPA b) USFWS Ü DOI and NMFS Ü DOC
Jurisdiction	a) - c) German "Agencies" usually do not have implementing power, but act advisory to their Secretary a), b) Agencies under supervision of BMU; services can also be used by others; proposing regulations and guidelines, the formal putting in force is done by Secretary itself c) Agency consulting all federal institutions in the field of hydrology, but mainly the WSV (§45 (3) WaStrG) d) Agency for hydrological, constructional, geological and mechanical engineering; mainly consulting the WSV (§45 (3) WaStrG)	a) EPA 1. Non on WRDA 2. Can ve to the CWA Sec. 404 permits, create the Sec. 404(b)(1) guidelines, that have to be used by the Corps 3. Designate ocean dredged material disposal sites ("DOD") according to Sec. 102 MPRSA; Establish evaluation criteria for dredged material to be dumped in the ocean according to Sec. 102 MPRSA Issue permits for dredged material to be dumped (except for material regulated by the COE) according to Sec. 102 MPRSA 4. Concurrence with Sec. 103 permits required 5. Review NEPA documents (42 F.R. 59543) b) Have to be consulted according to ESA and FWCA
2. Laender/State		
2.1 Dredging	Minor relevance	Minor relevance
2.2 Environment	Regional Authorities Ü Laender	a) BCDC b) RWQCB ⇐ SWQCB (⇐ CalEPA) c) CDFG (⇐ CRA)
Jurisdiction	For Federal waterways: a) "Einvernehmen" (agreement) according to § 4 WaStrG (maintenance) and § 14 (3) (new work projects): review by the Regional Authority, if the project affects water resources or "rural management" (controversial: whether nature protection is included); conditions can be enforced and the agreement can be denied b) "Benehmen" (information) according to § 9 BNatSchG: Laender have to be informed if project has impacts on habitat and wildlife (provisions of the Laender Nature Protection Law) according to § 8 BNatSchG; comments have to be considered	For Federal projects a) Consistency determination: project is consistent with Bay Plan (McAteer Petris Act, Cal. Gov. Code §§ 66600 - 66681), according to the federal CZMA (16 USC Sec. 1456 c) (1): can be denied, but neither conditions nor penalties can be enforced b) WQC: project is consistent with Basin Plan (Sec. 208 C.W.C) according to Sec. 401 CWA (federal) or WDR (= permit) according to California Porter-Cologne Water Quality Control Act (§ 13263 Water Code) c) Has to be consulted according to CESA

Ü under supervision of

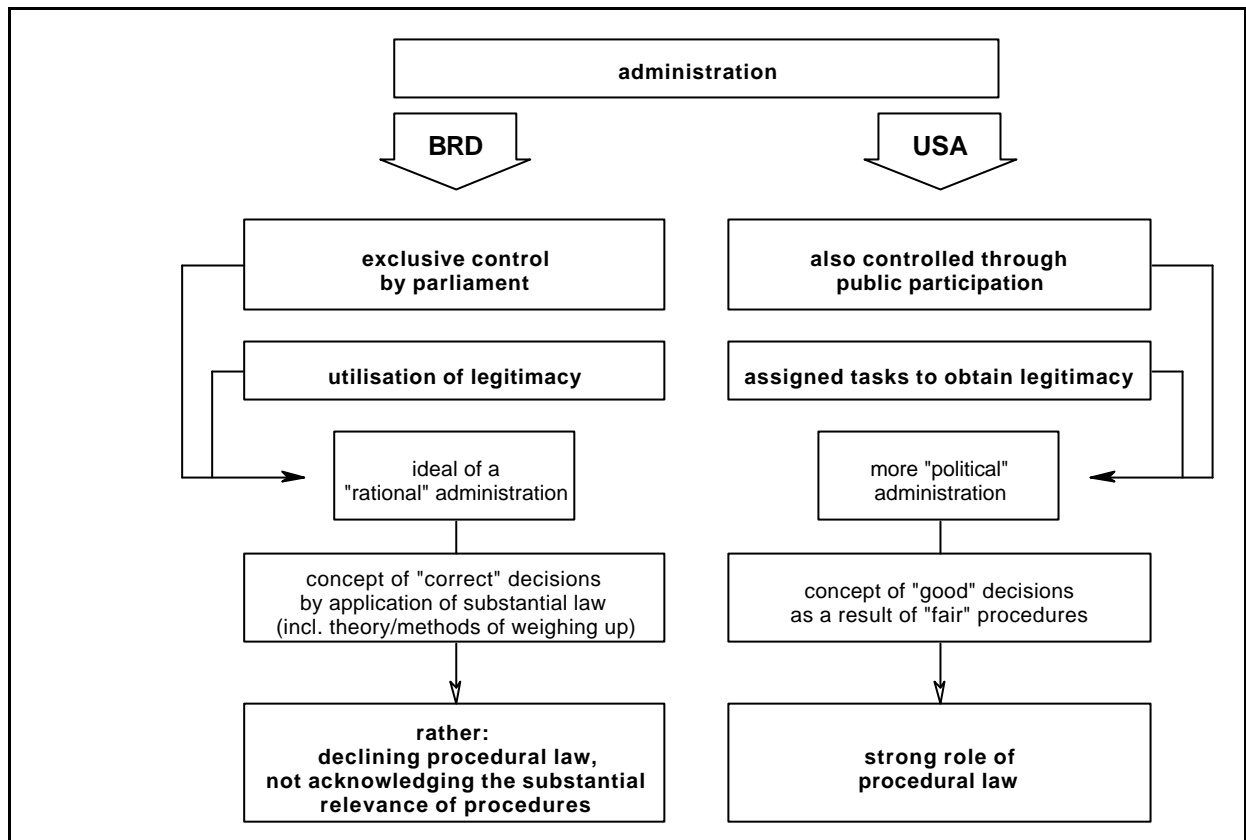
* comparable to Waterways Experiment Station of COE

Abb. V-1: Causes and consequences of the US constitutional provision for the executive (schematic)



(own design)

Abb. V-2: Causes and consequences of the different concepts of separation of powers in Germany and the USA (schematic)



(own design)