



**THE STATE OF
PRACTICE OF CEAM
THE GOOD, THE BAD,
THE UGLY**

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Historical Context



- **1970s – CEs mentioned, defined as effects of the project under review in combination with the effects of other past, present, and future actions**
- **1980s-1990s – inclusion of CEs in EISs, CEA processes, litigation, IAIA Annual Conferences**
- **2000s – improving practice for project CEAs, expanding methods, CEA and SEA, new topics**

Importance of CEAM



- **Conceptual reasons** – the environmental effects of primary concern tend to be cumulative effects, not simply the effects of single projects
- **Pragmatic reasons** – CEA guidance and other EIA legislation of the 1990s requires that CEs be assessed
- **Regulatory reasons** – make “room” for future developments
- **Idealistic reasons** – minimize negative CEs, promote resource sustainability

Process Context of CEAM



- **Start with “incremental effects” of project on VECs; then focus on VECs**
- **Give attention to spatial and temporal boundaries, and include other actions contributing to effects on VECs**
- **Describe historical to current conditions of selected VECs (trends)**
- **Connect actions to selected VECs and “predict” changes**
- **For VECs with significant changes consider mitigation and management, including adaptive management**

CEA Tool Kit (Examples)



- **Modified checklists and interaction matrices**
- **Conceptual models**
- **Expanded perspective on use of indicators and indices**
- **GIS for information presentation and predictive modeling**
- **Quantitative modeling (inputs for future actions?)**
- **Photomontages**
- **Scenarios**
- **Adaptive management (monitoring)**

Creativity in CEAM



- **Opportunity to “think outside the box”**
- **Need to adapt traditional methods (tools) to meet CEA needs, and to learn from new experiences and develop new methods**
- **Opportunity to focus on environmental sustainability**



- **Examine existing environmental programs for usable tools for CEs management (trading programs, local and regional resource programs, etc.)**
- **Develop regional programs with multiple stakeholders**
- **Consider adaptive management for large-scale concerns**

Challenges in CEAM



- **Scientific understanding of complex ecosystems characterized by multiple stressors**
- **Institutional policies which do not take into account holistic needs (and CEAM)**
- **Uncertainties related to project, future actions, effects, linear or non-linear relationships for effects, and effectiveness of mitigation measures and management programs**



- **Achieving collaboration between developers, proponent and regulatory agencies, and stakeholders (CEs require cumulative solutions)**
- **Developing appropriate cumulative effects management efforts (and programs)**

Ugly Lessons



- **Assertions without analysis**
- **Ignoring systematic CEA processes (e.g., other actions, non-admission of significant adverse effects)**
- **Lack of emphasis by key decision makers**
- **Non attention to CEAM due to concerns about who is responsible**
- **No collaboration**
- **Attitude that CEAM cannot be done**

Bad Lessons (Needs)



- **Attention to cumulative social and economic impacts**
- **Reduce disconnects (have collaboration) between proponents, agencies, EIS consultants**
- **More explicit TOR for CEAM work**
- **Recognize continuing useability (value) of CEA studies (with updating)**
- **“Quick look questions” for EA level of analysis, and for selection of VECs**



- **CEA guidance for agencies/specific actions**
- **Monitoring and adaptive management for large-scale studies**
- **Be responsive to new topics (e.g., CEA and climate change)**

Good Lessons



- **Change to VEC perspective (mindset)**
- **Context scoping is very important**
- **Apply process to VECs, and document its application**
- **Cannot quantify future CEs due to lack of information**
- **Think about communicating CEA information in EISs**
- **CEs can be integrators of effects at project, regional, and strategic levels**



- **Can emphasize environmental sustainability**
- **Practice is improving with experience**
- **Can build upon and adapt EIA practice**
- **Internet data/information can aid CEAM**
- **Recognition that my project is not isolated**
- **Proactive approach is needed for CEs management**