

埋没便益研究の視座:アダプティ ブマネジメントによるアプローチ

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ここでの埋没便益の定義

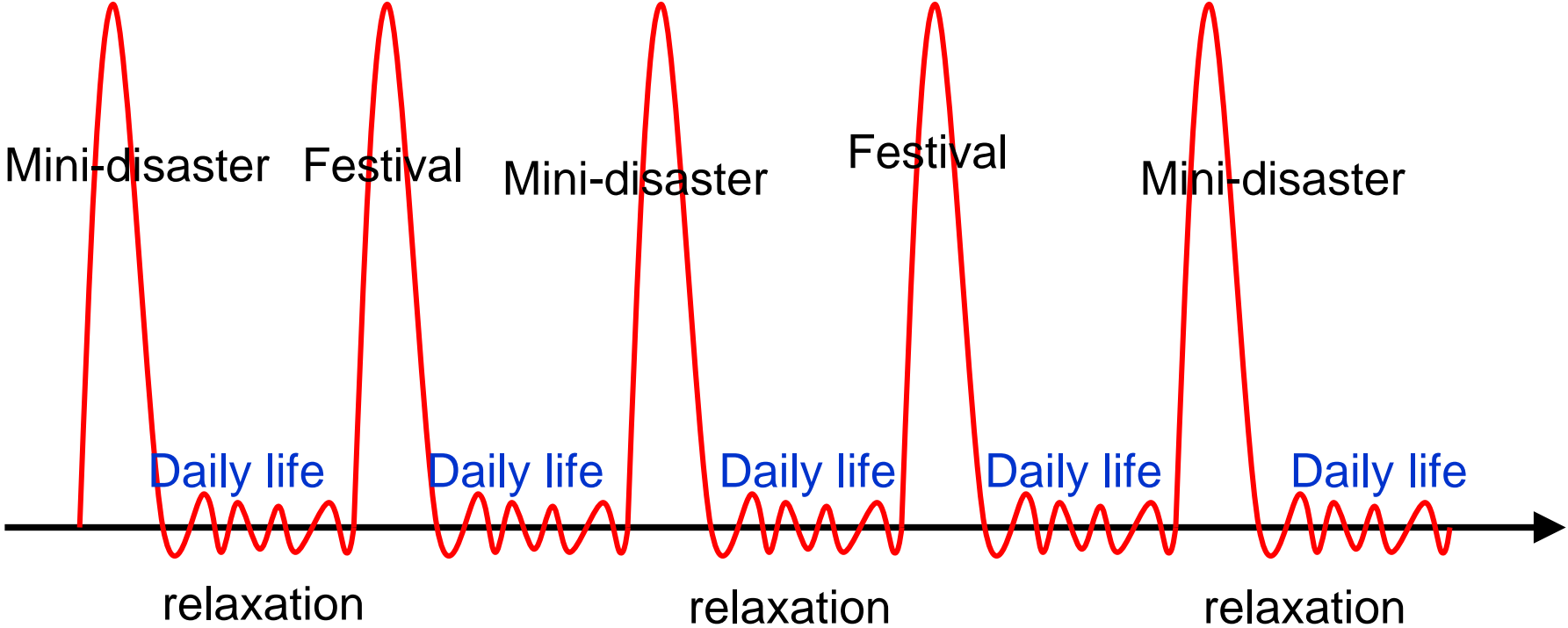
- 「能力限界にいたってはじめてその機能の限界水準が顕在化するような陰的な機能便益評価したもの」(狭義)
- 「能力限界にいたってはじめてその機能の限界水準や存在の消滅が顕在化するような陰的な機能や存在を見えるように表現したもの」(広義)

Vital Rhythms

Tension

Tension

Tension

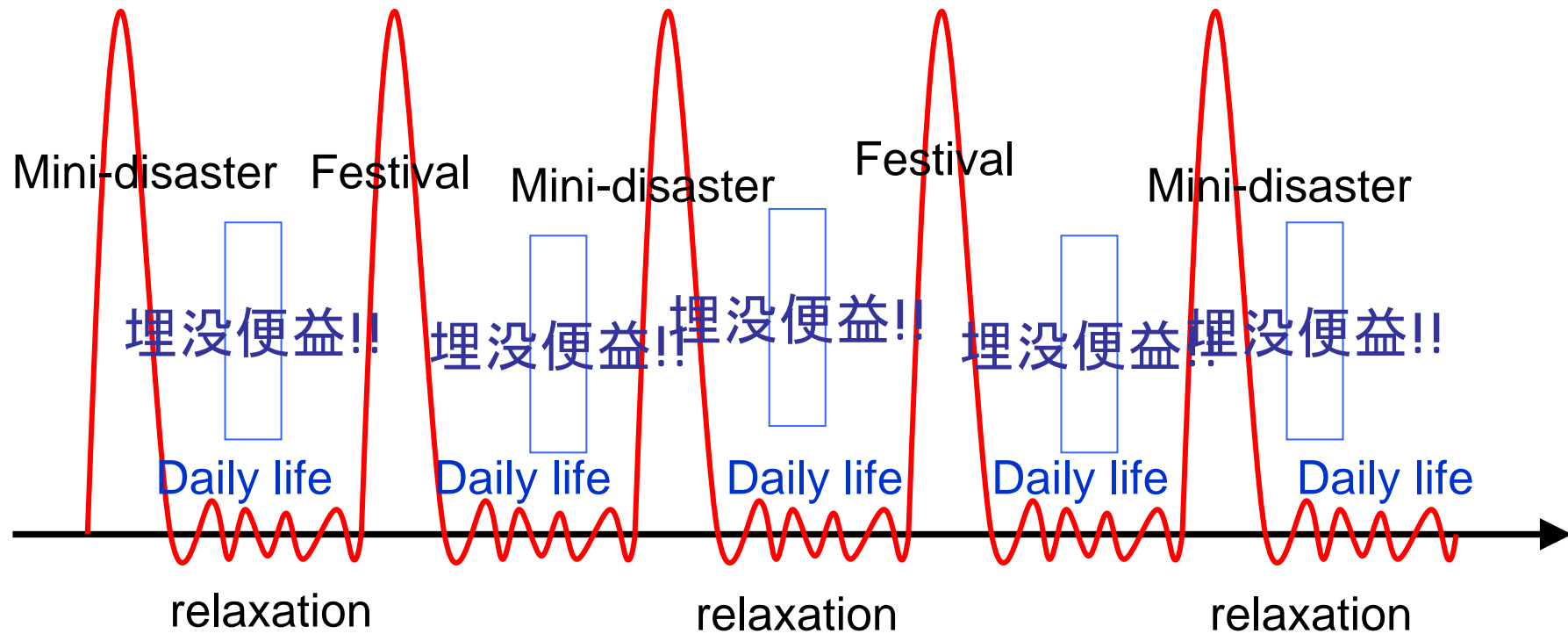


Vital Rhythms

Tension

Tension

Tension



小刻みの埋没便益のシグナル

持続的で適応的な総合防災ガバナンス構想の薦め

- 長期的な時間軸に沿って、カタストロフな(低頻度・甚大被害型)災害リスクを持続的にマネジメントするためには、以下のような入れ子構造の多重的なアダプティブマネジメントの方法論を構築し・実践していくことが総合的なリスクマネジメントとして戦略的に有効である。
- より高頻度ではあるが、被害はそれほど大きくない災害が当該地やその近辺(あるいは情報・コミュニケーション技術の活用によって擬似的に近距離化された地域)で発生した際に、そのタイミングよく活用する。

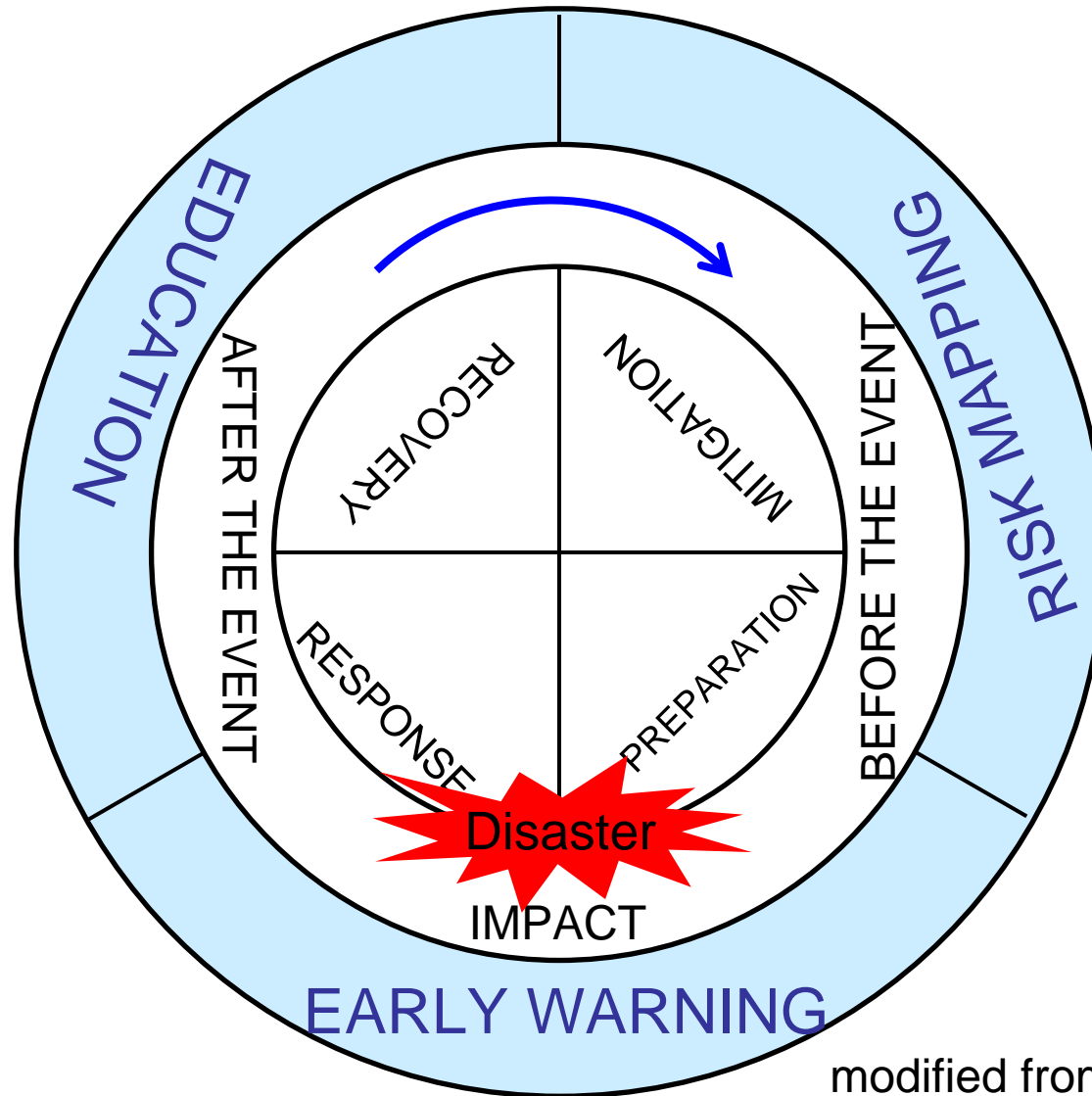
律動的に社会の防災力を維持する 律動的に社会に災害リスクをシグナル ルとして送る

- その都度小さな(より被害スケールは小さいが高周期で回る)Check-Action-Plan-Do (CAPD)サイクルを律動的に援用(シグナル化)していく。
- カタストロフな災害リスクに対しても、結果的に社会の総合的な災害対応能力を高め、適切に維持していく上で効果的になるようにマネジメントする。

Conventional disaster plan vs. 21st century integrated disaster planning and management

- Reactive
- Emergency and crisis management
- Countermeasure manual approach
- Predetermined planning (Non-surprise)
- Sectoral countermeasure approach
- Top-down approach
- **More proactive**
- More risk mitigation + preparedness approach
- **More anticipatory/ precautionary** approach
- **More comprehensive** policy-bundle approach
- **More adaptive** management approach
- **More bottom-up** approach

Disaster management cycle as a clock



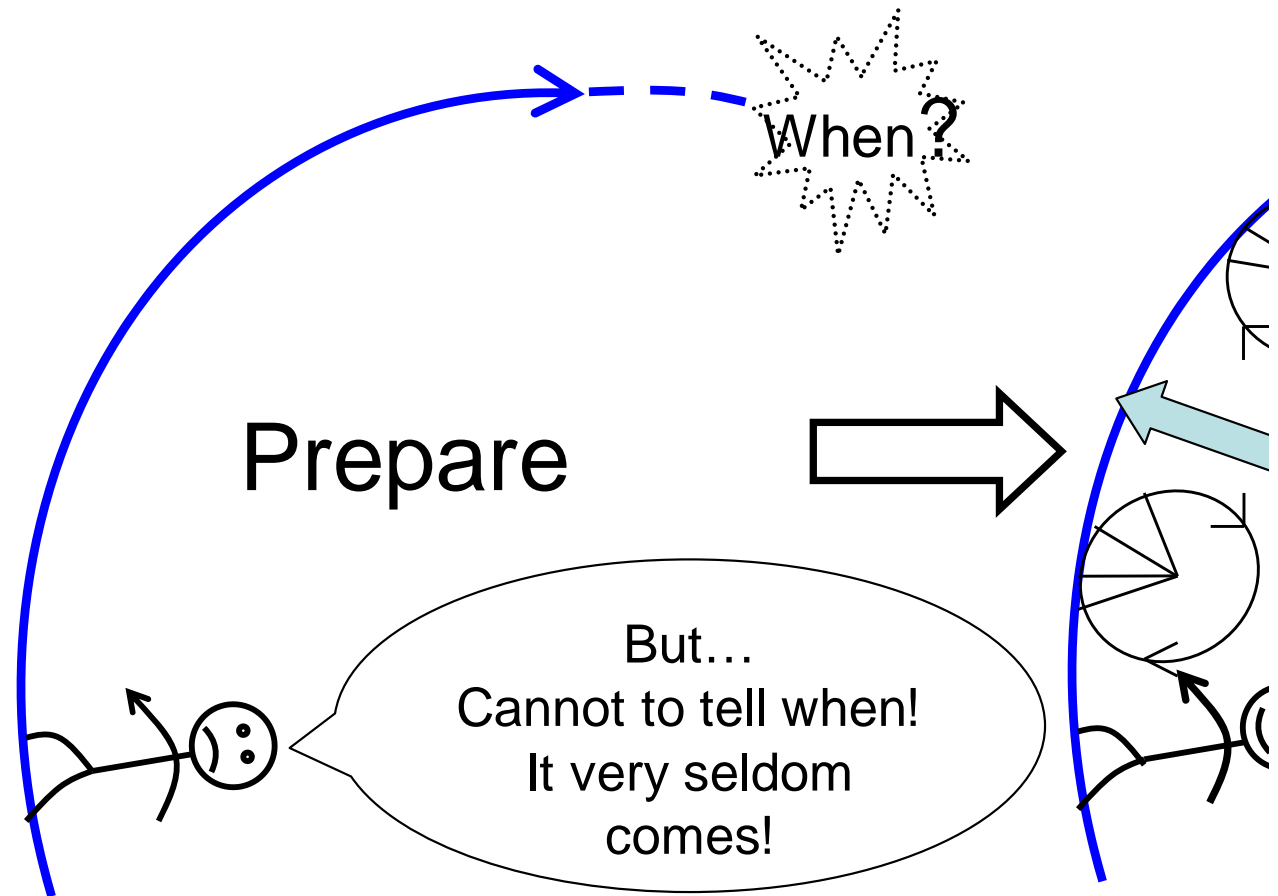
modified from Alexander, 2002

Natural Hazards/Disasters as Extreme and Non-extreme Events

- Large Cycle (Clock): Low frequency-high impact event = Catastrophic Disaster
 - e.g. 1995 Kobe Earthquake
 - 2005 Hurricane Katrina
(due to climate change?)
 - 2008 Sichuan Earthquake
- Middle/Small Cycle (Clock): Mid/high frequency-mid/low impact event= Disaster Risks to Live with

Can we sustain our tension that long for the future surprise day?

Non-strategic

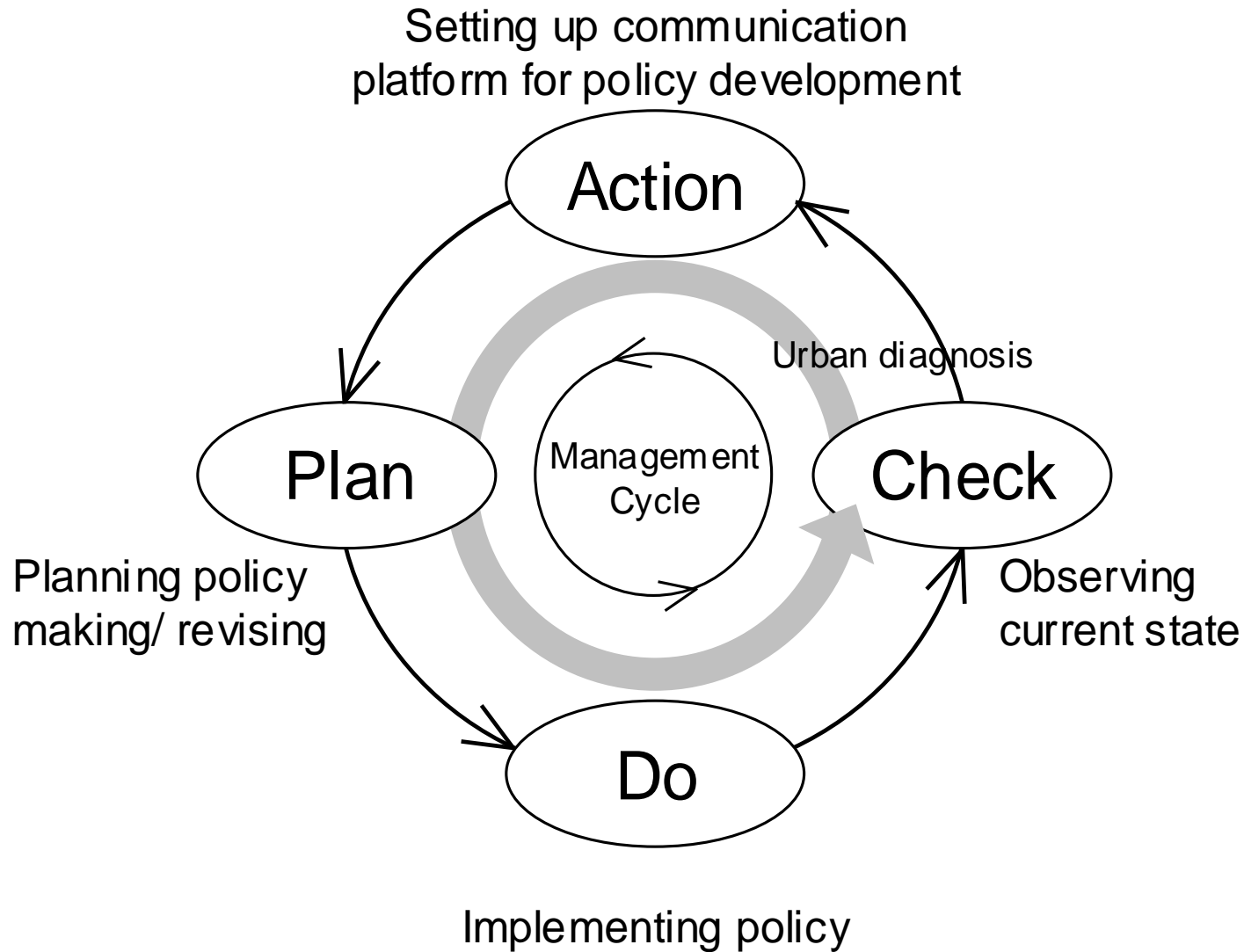


The Last Mile for Disaster Reduction

- You know it's important. But...
- You don't do it actually!
- Why?
- There's a small but deep gap between knowledge and action!
- How can we implement it!
- This is an implementation gap problem!
- Clues may exist: from a lack of motivation, self-drive,..... to prioritization
- Science has to address this last mile problem!

Plan-Do-Action-Plan Process

Small but Complete by Adaptive Management



Timing is a leverage for initiating
PDCA Processes
In Society (City/Region/Nation)

Unpredictable but imaginable, and once it happens, it's the time for learning

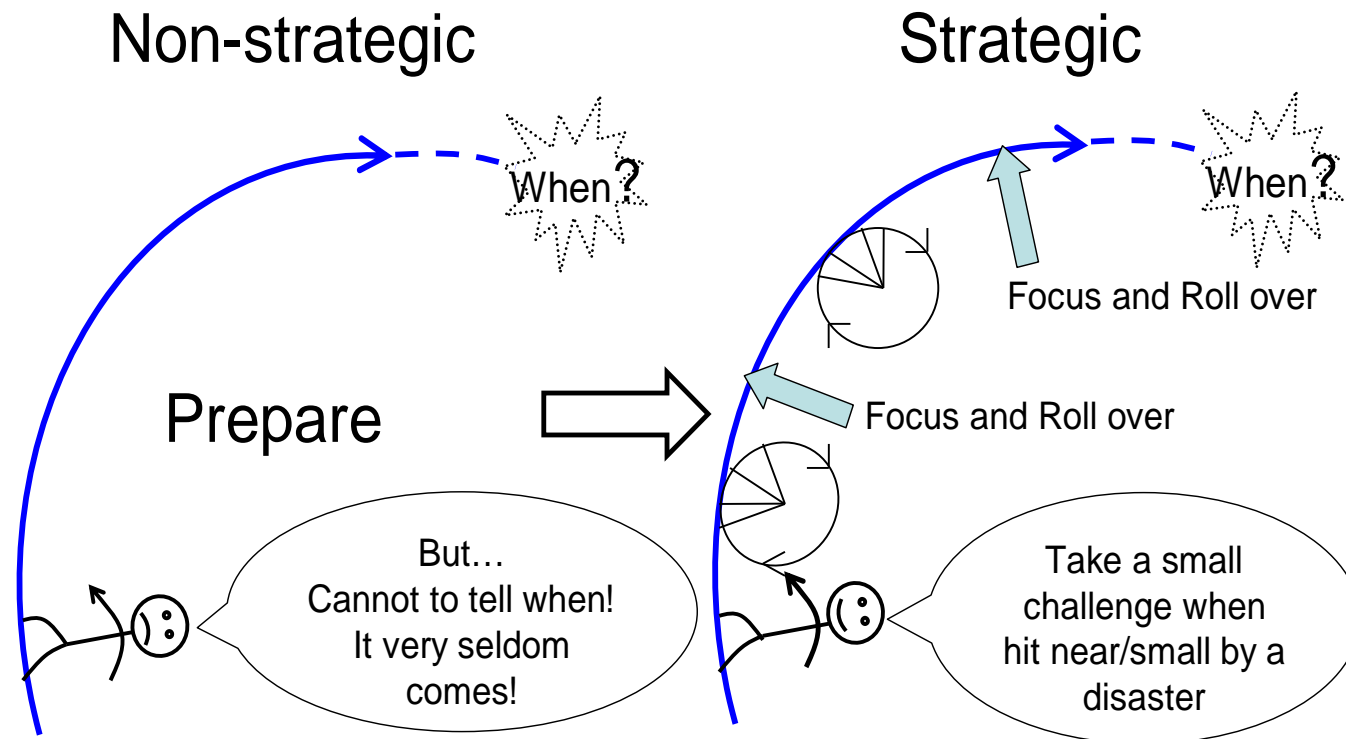
- Anytime nearby or near-scale not-nearby disaster surprise society under disaster risk, that is the timing.
- How can the governments, NGOs and companies for disaster reduction provide an effective small but timely leverage?
- That is also a question.

English Summary: Non-life Rating Organization of Japan

News Release 21 Aug. 2008

- On national average, 44 % of those insured on fire insurance also joined earthquake insurance, with a 2.3 % increase from the last year 2007
- Has seen 5 year's consecutive increase
- Kochi, Aichi and Miyagi Prefs. all supposed to be under nearing earthquake disaster risks have recorded more than 60 percent
- Markedly Ishikawa, Toyama and Fukui Prefs. have experienced the ever increasing growth rate. They are in the central and neighboring prefectures struck by the 2007 recent earthquake disasters in the northeastern Japan Sea coastal regions.

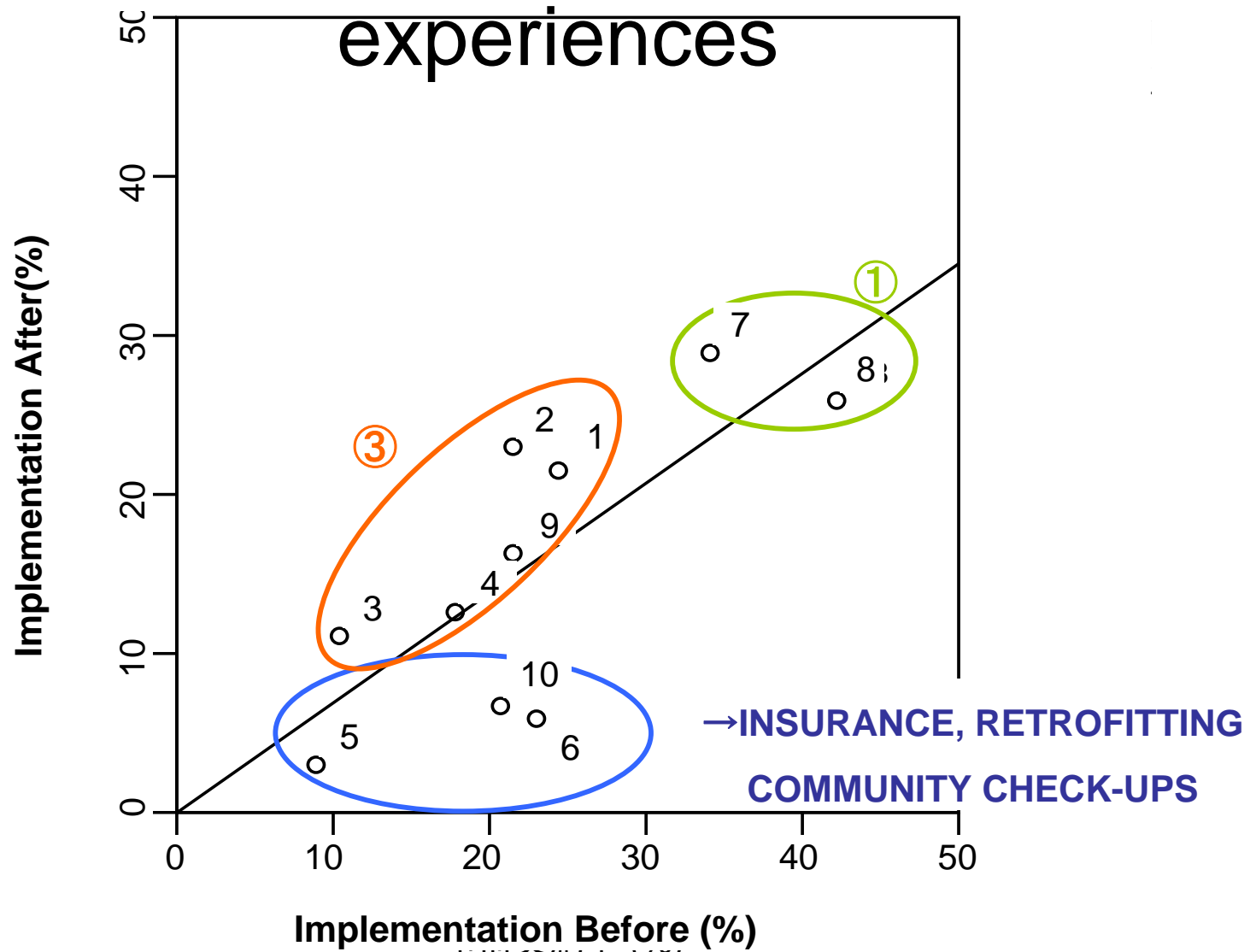
Strategic Shift towards Sustainable Disaster Cycle Management



- Not easy to maintain awareness for long
- Not easy to bring it into motion from inside
- Not easy to become rhythmical between tension and relaxation in a day-to-day pace mode
- Not to be encouraged and rewarded by the effort

- To put in PDCA small cycles as fliers
- To catch the timing and external moment (shock)
- To beat the time with tension and relaxation
- To encourage and motivate people by making it visible and rewarding

Implementation Ratio Changes before and after nearby-, “Oh-No!” disaster



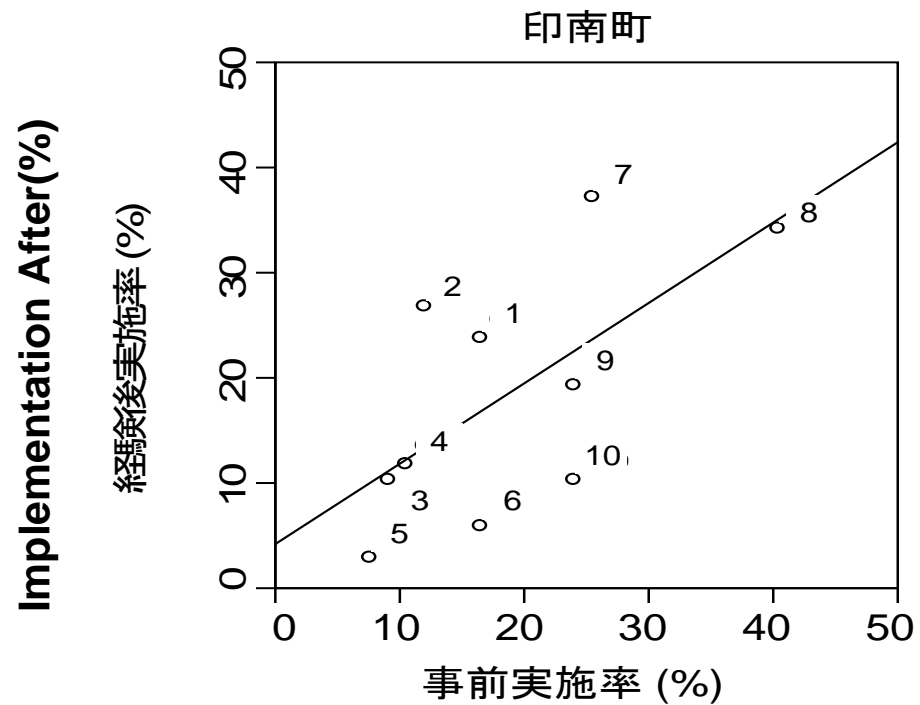
“How much does it trouble you”- Doe it make difference?

	Monetary Expenses	Information collection and other troublesomeness	Proactive measures
①	Low	Low	Household check-ups
②	High	High	Retrofitting, Joining Insurance
	Low	High	Community check-ups
③	Middle	Low	In-house stockpile, Furniture-fixing, Taping furniture glasses, etc.

Regional differences

Inami Town, Wakayama

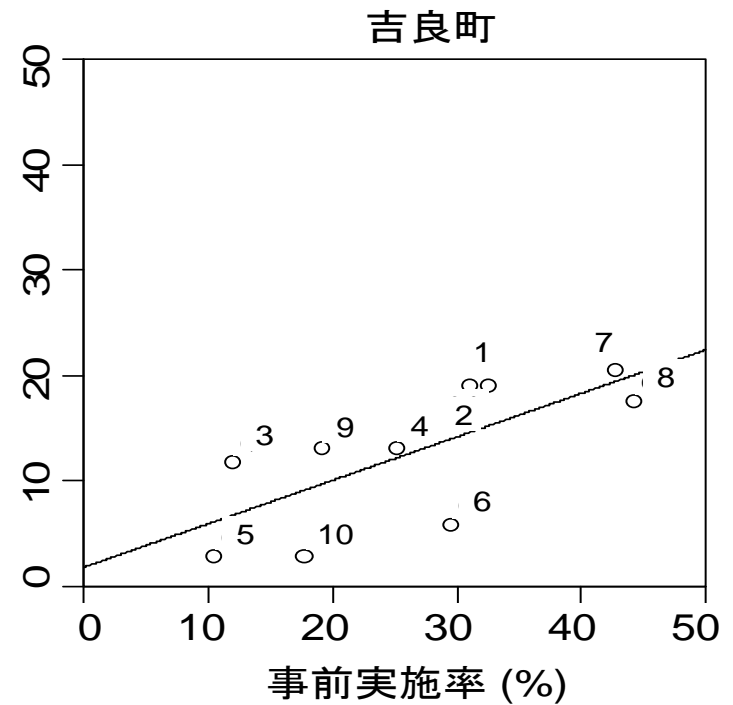
Kira Town, Aichi



Implementation Before (%)

Doing well

High awareness

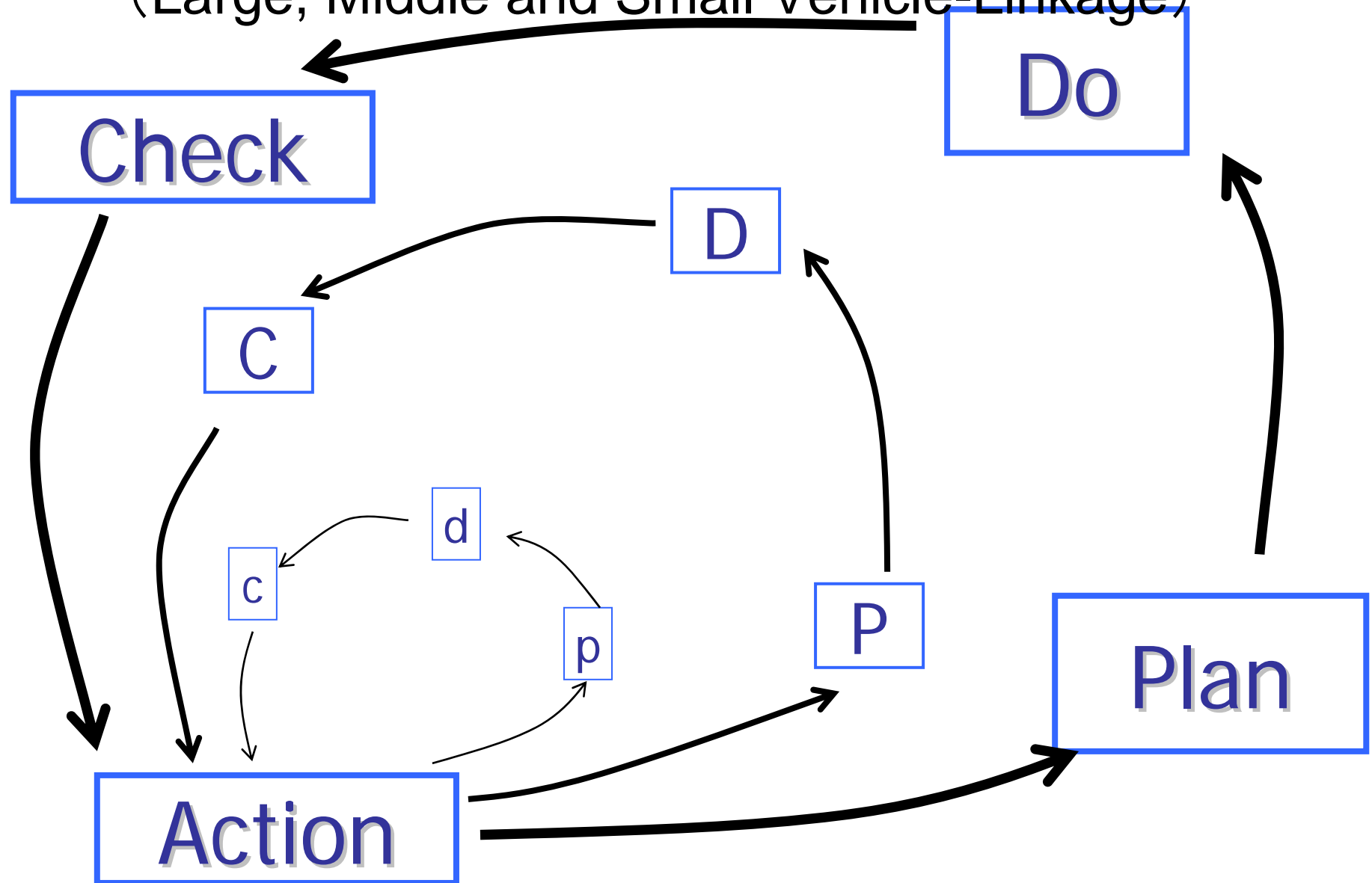


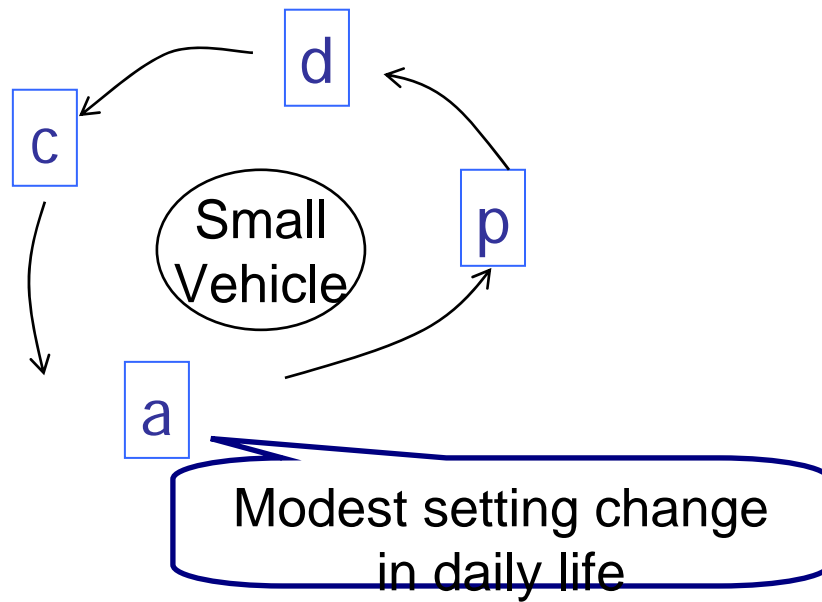
Implementation Before (%)

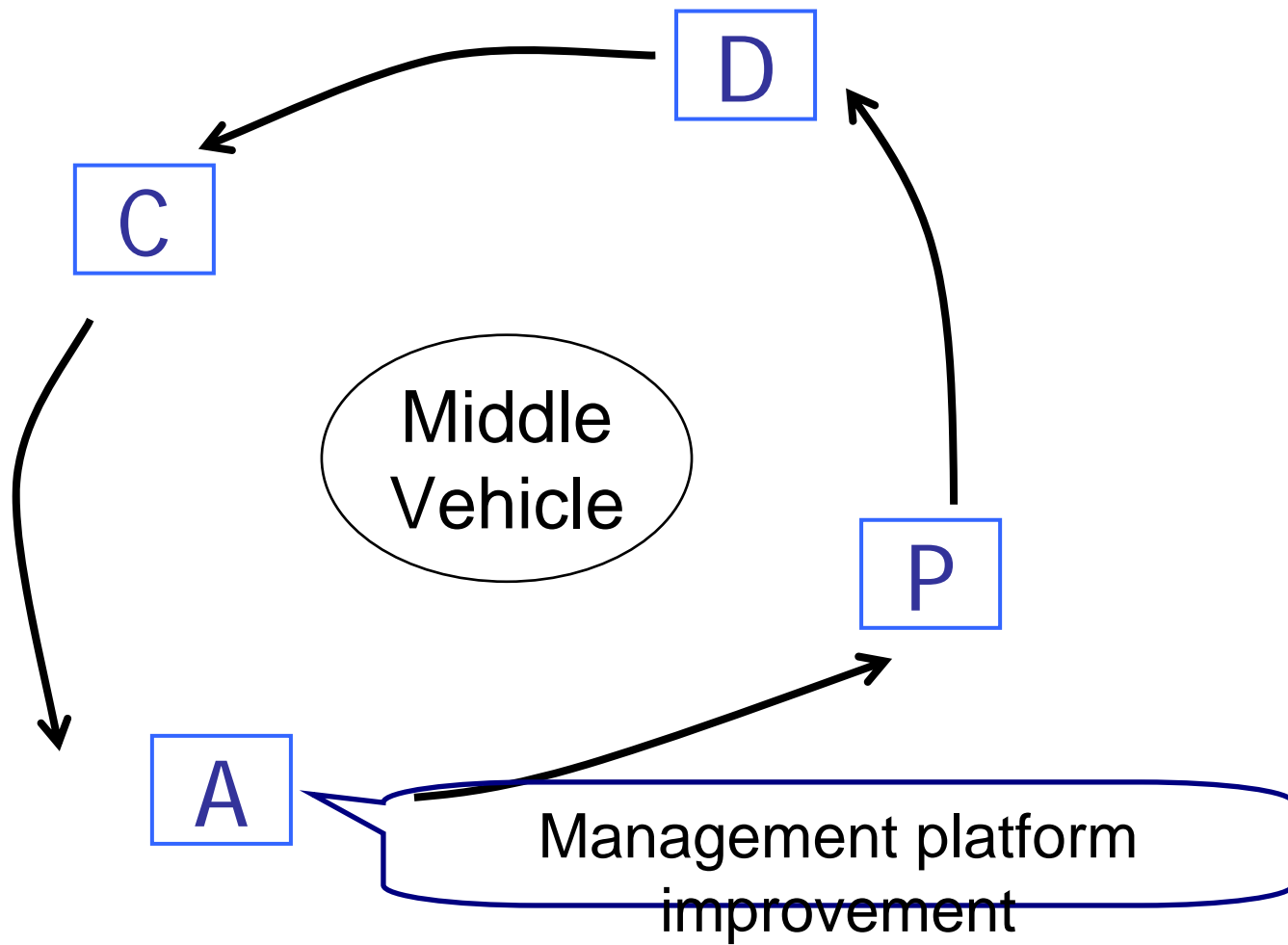
Doing not so well

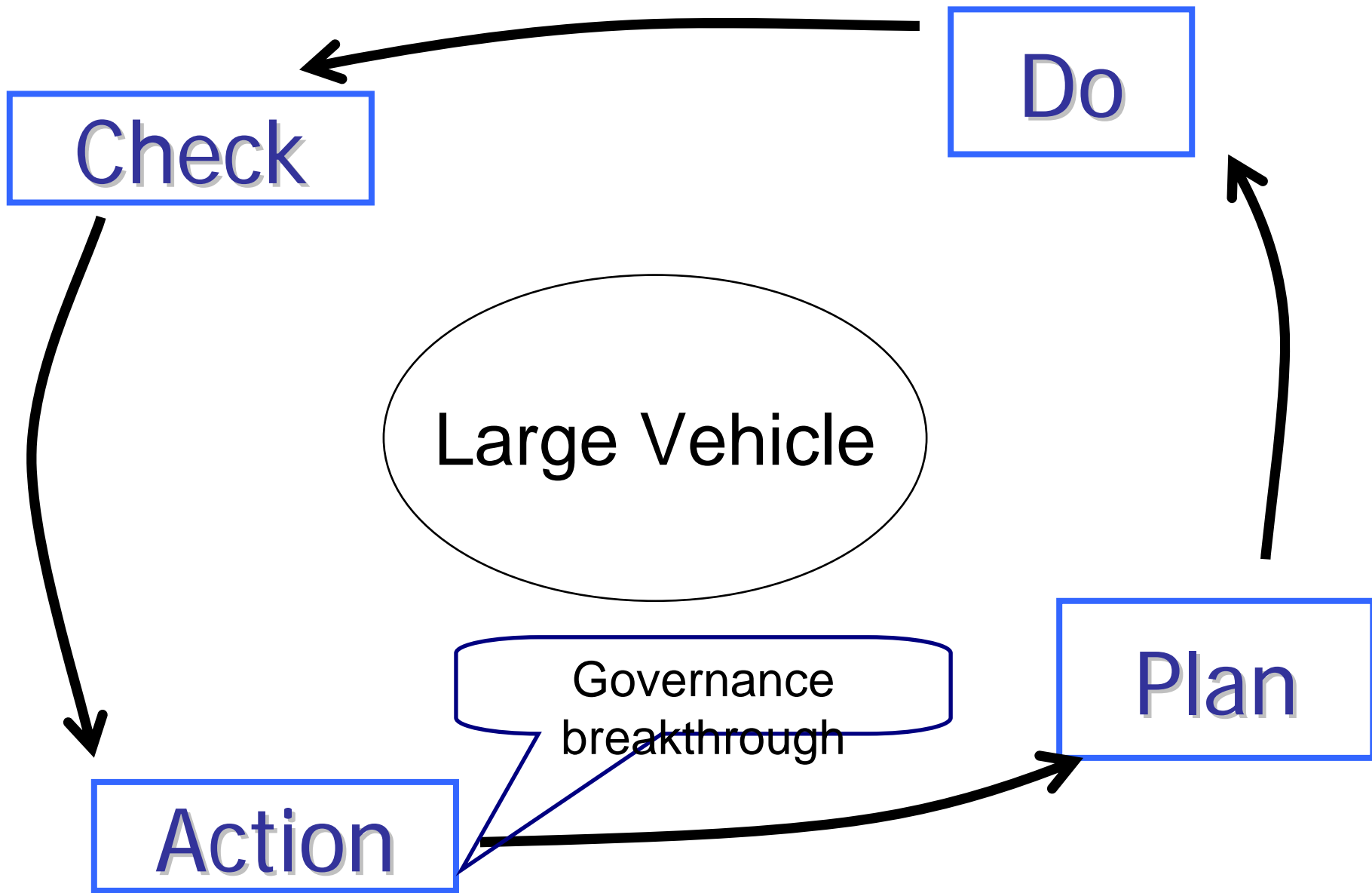
Low Awareness

Nested Structure of PDCA Cycles (Large, Middle and Small Vehicle-Linkage)







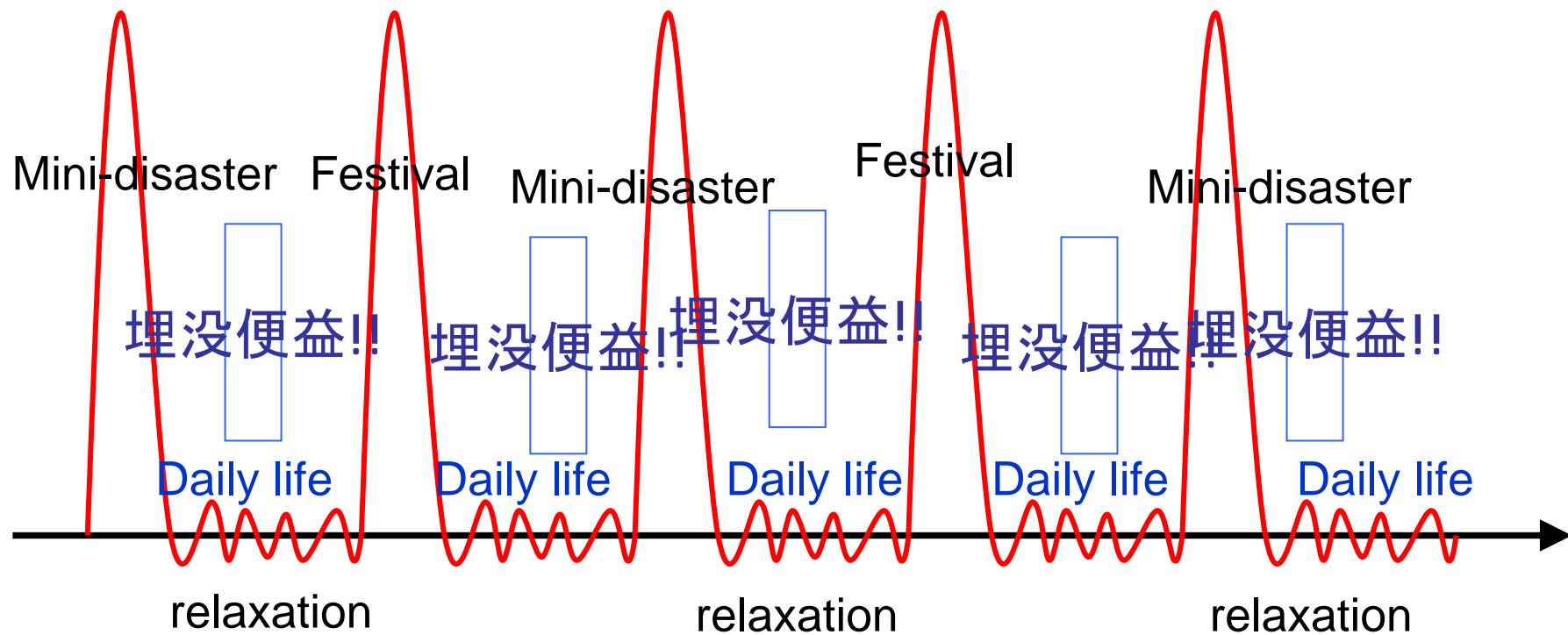


Vital Rhythms

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小刻みの埋没便益のシグナル

Strategy II: Self-assigned recapturing rhythm

- Explicit event: Yearly, Decade, 25th year, 50th year, 100th year anniversary in memory of the disaster→e.g. Timely (Time-natural) campaigning for disaster reduction
- Implicit event: Yearly festival, 20 year-interval ceremony, etc. to maintain and recover social capacity (knowledge and technology)

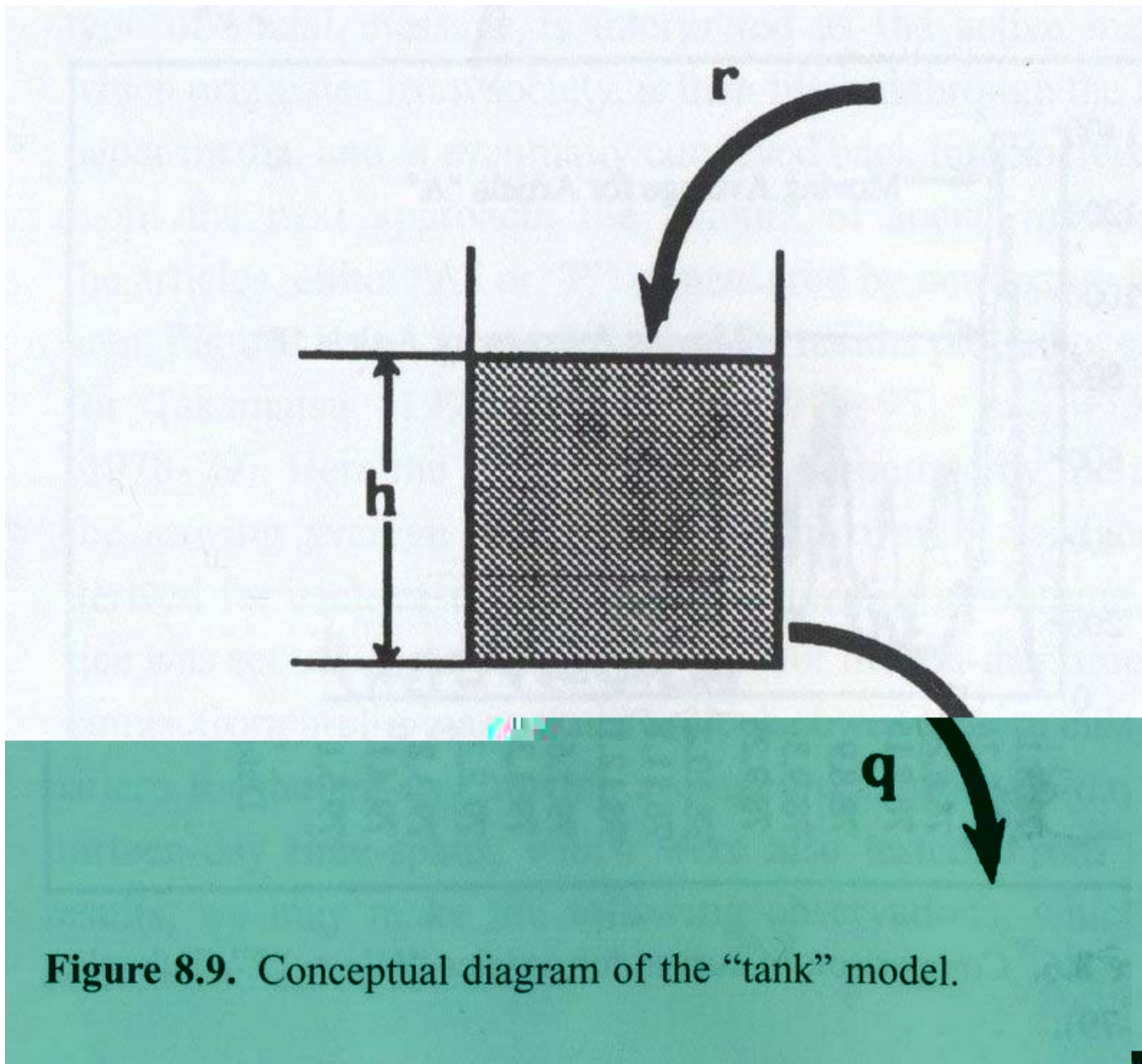


Figure 8.9. Conceptual diagram of the “tank” model.

Example in Takamatsu and Fukuoka, Japan

- Timely (Time-natural) campaigning for drought disaster reduction (“save water campaign” by mass media)
- If appropriate, the impulse message is found to work like “intensive rain fall” and following “run-off effect”
- A hydrological run-off model explains the process!
- It offers a possible indicator for action plan (disaster reduction campaigning practice)

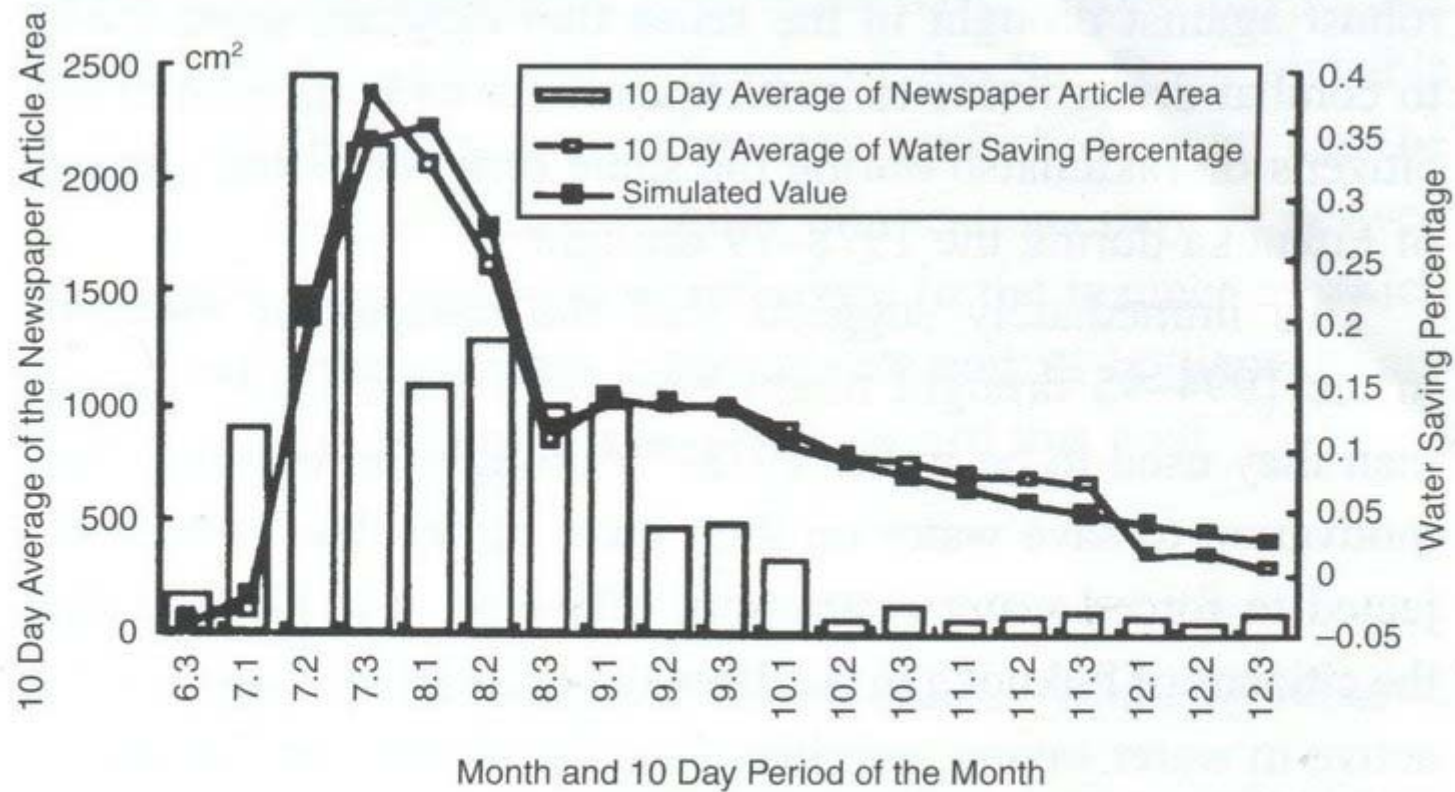


Figure 8.10. Comparison of observed SPRD, WSP, and simulated WSP (Takamatsu, 1994).

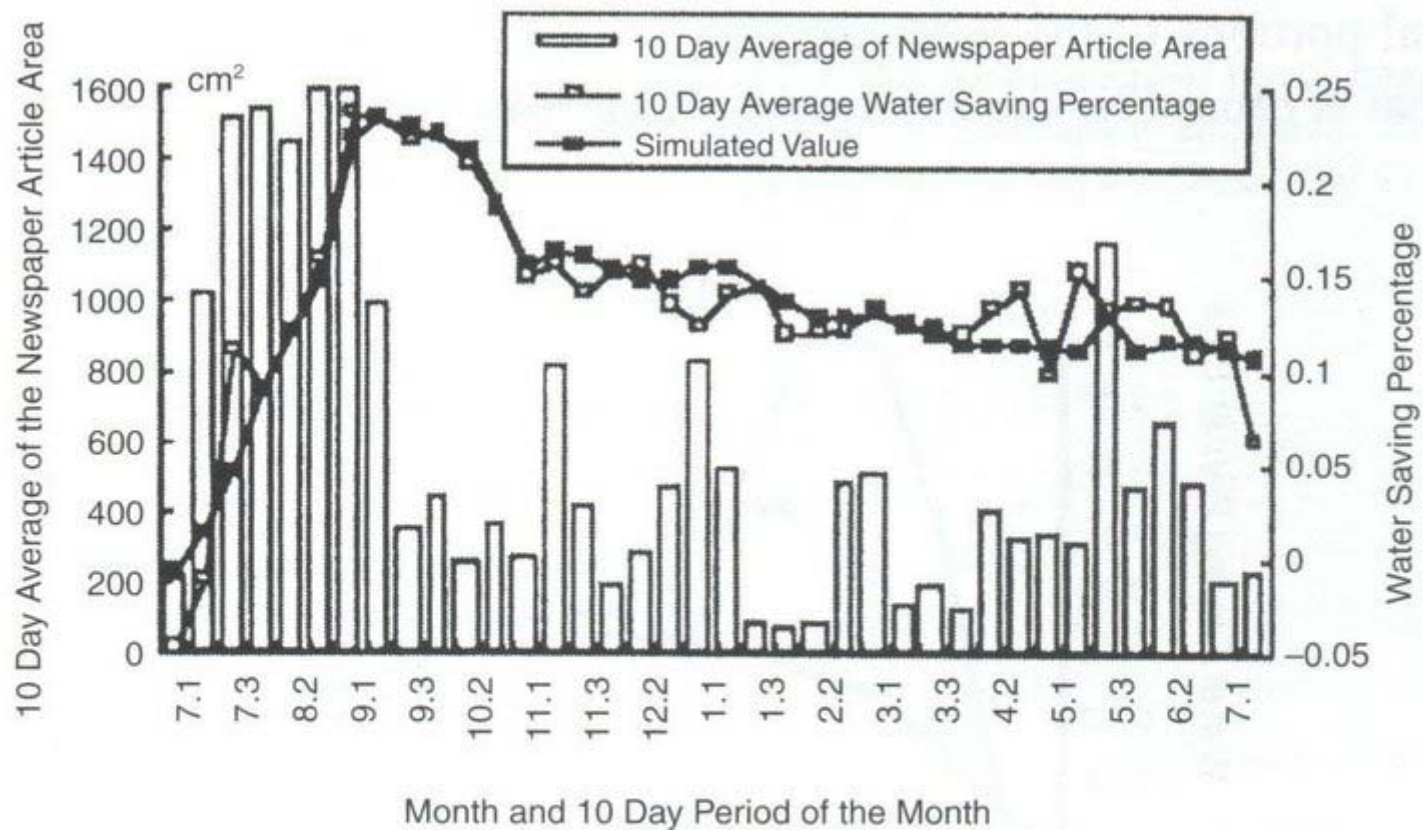


Figure 8.11. Comparison of observed SPRD, WSP, and simulated WSP (Fukuoka, 1994–95).

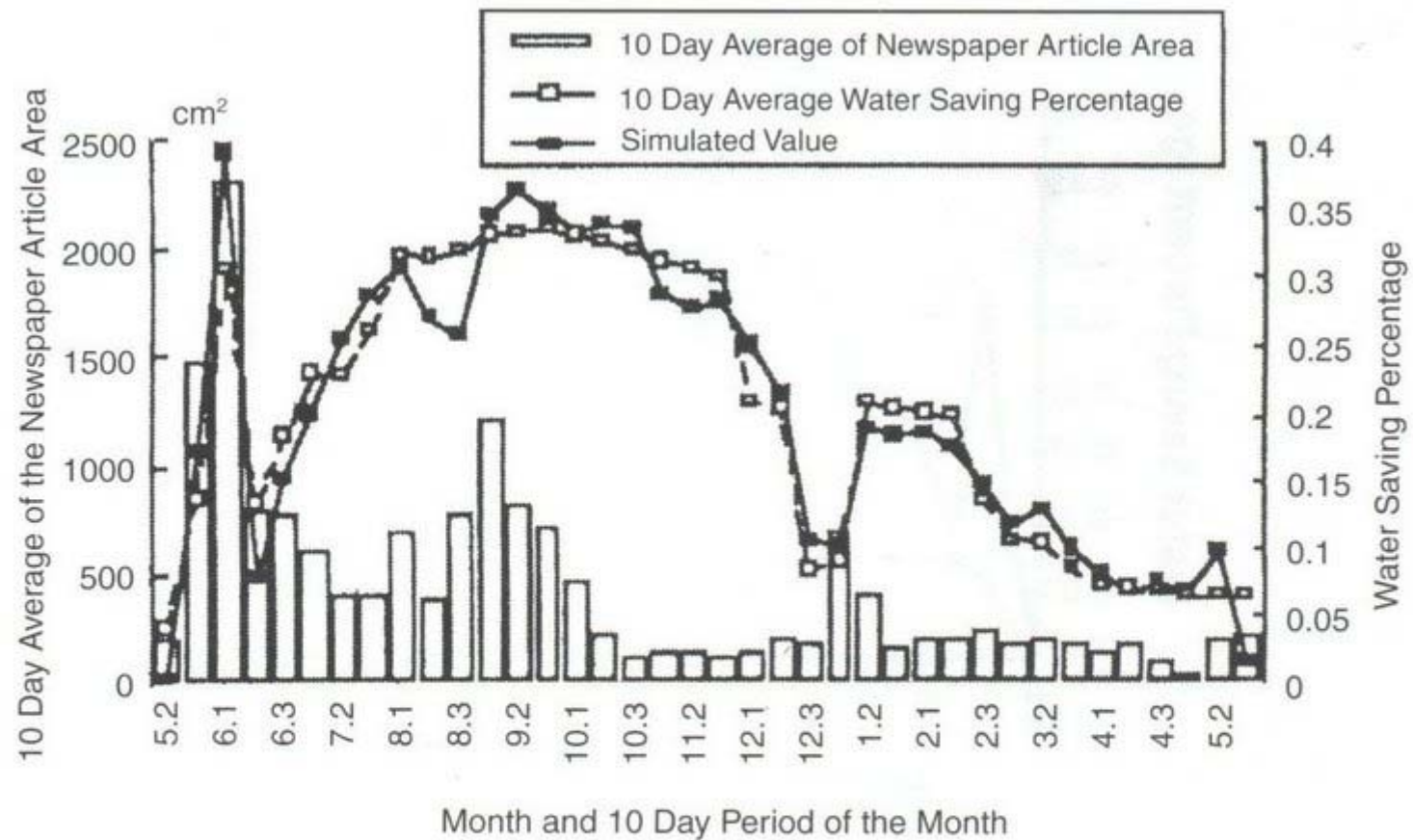


Figure 8.12. Comparison of observed PRD, WSP, and simulated WSP (Fukuoka, 1978–79).

おわりに代えて

- 社会へのシグナル効果
- 社会へのものがたりの意義
- 防災施設と防災力(災害対応能力)のライフサイクルマネジメントにつなげいく
- 事業評価
- 防災会計学・防災基金システムを構想する
- 社会の安全・安心への気づき創生力の律動的マネジメント→安全・安心社会の律動学
- そのまたいろいろ.....