



《公约》执行情况审评委员会
第十一届会议
2013年4月15日至19日，波恩
临时议程项目10
促进和加强与其他有关公约以及国际组织
和国际机构的关系

关于干旱(包括水资源短缺)专题的倡导性政策框架

秘书处的说明

概要

本干旱¹问题倡导性政策框架草案由《联合国防治荒漠化公约》(《荒漠化公约》)秘书处编写。秘书处编写本草案时，广泛借鉴了为国家干旱问题政策高级别会议编写的两份文件：(1) 政策文件：国家干旱管理政策；(2) 科学文件：国家干旱管理政策的最佳做法，以及2011年7月14日至15日专家会议论文集：完成一份国家干旱政策汇编。

根据第9/COP.10号决定，干旱问题倡导性政策框架向《荒漠化公约》秘书处提供帮助缔约国解决主要干旱问题和关切的工具和方针。本倡导性政策框架的首要目标是推动制定并采纳减轻社会对于干旱脆弱性的政策。框架旨在促进扶持型国家政策，以应对旱地干旱带来的挑战。

本倡导性政策框架希望帮助各国制定国家干旱管理政策以及一系列相关国内法律、法规和方案，用以提供支助和资金并缓解干旱对人类、动物、工业、农业和环境的影响，从而应对干旱带来的挑战。通过本框架，秘书处能够接触各国的政策制定者，倡导他们在国家一级制定并采纳相关的干旱管理政策。

¹ 本文件中，“干旱”包括水资源短缺。

本框架无意提供任何内容或建议任何具体的政策立场。国家干旱管理政策的具体内容取决于各国，应当由所涉国家在所有感兴趣和受影响的利害关系方的充分参与下自行制定。必须考虑拟议的干旱政策的法律影响，以及该政策与其他部门政策的一致性。

因此，本框架主要是为了《荒漠化公约》秘书处推动在国家一级制定国家干旱管理政策，缓解干旱和水资源短缺对经济增长、人类福祉和环境状况的影响。预计通过利用本干旱问题倡导性政策框架，以及倡导采用参与式方针和自下而上的对话及磋商进程应对频发的严重干旱，受灾国政府最高层将作出系列决定。该进程将确定各级将应对哪些干旱问题，以及如何应对。

目录

	段次	页次
一. 导言	1-10	4
制定干旱问题(包括水资源短缺)倡导性政策框 架的法律授权	6-10	4
二. 制定干旱问题(包括水资源短缺)倡导性政策框 架的理由	11-30	5
A. 问题	11-14	5
B. 对当前干旱管理形势的分析	15-16	6
C. 干旱管理政策的不足之处	17-22	6
D. 弥补干旱管理政策不足的机会	23-30	7
三. 潜在的重要政策干预措施: 干旱(包括水资源 短缺)的重要对策	31-49	8
有效应对干旱(包括水资源短缺)的国家干旱管 理政策所需的关键行动	32-49	8
四. 审查和报告执行进展的拟议方法	50	13
五. 结论	51-52	14
六. 缔约方提出的行动建议	53-54	14
附件		
国家干旱问题政策高级别会议上提出的国家一级干旱管理 做法汇编		17

一. 导言

1. 干旱²与土地退化和荒漠化一样，加剧着全球水危机，淡水供给无法增加。频发的严重干旱导致潜水面普遍下降，引发严重的水资源短缺和沿岸地区海水入侵。水安全与粮食安全一样，正成为全球许多国家和地区的优先事项。
2. 自 1990 年以来，全球三分之一人口处于水资源短缺状况，干旱是部分原因，荒漠化和土地退化又加剧了这一状况。全球人口已突破 70 亿，再加上干旱问题，一些国家已逼近水资源的极限，越来越感到水资源短缺。普遍的气候变化趋势，再加上荒漠化、土地退化和干旱的影响，到 2030 年，³ 全球将有近一半人口生活在水资源极为短缺的区域，其中 7,500 万至 25,000 万人生活在非洲。
3. 《联合国防治荒漠化公约》(《荒漠化公约》)的缔约方中，总共有 164 个旱地和非旱地国家受到荒漠化、土地退化或干旱的影响，或受到三者的共同影响。荒漠化、土地退化和干旱的负面影响最先体现在水资源方面。此外，在需求激增的情况下，水资源短缺有可能导致国家内部和国家之间的争端和冲突。此外，干旱、粮食无保障以及贫困都与水资源短缺有着密切联系。
4. 全球旱地的平均年降水量不足 650 毫米。降水量在空间和时间上的分布变化极大，由于气候变化的影响，预计这种情况还将继续，将使数亿人口面临更多的极端天气事件(干旱和洪水)。到 2030 年，荒漠化、土地退化和干旱的影响可能将使全世界近三分之二的人口面临日益严重的水资源短缺问题。
5. 这些恶劣的气候条件使贫困人口处境艰难；估计显示，每人每天消耗 2-4 升水。人们消耗的水大多来自食物。例如，生产一公斤牛肉需要 15,000 升水，而生产一公斤小麦仅需 1,500 升水。荒漠化、土地退化和干旱加剧了全球水危机，随着人口增长，特别是旱地地区的人口增长，越来越多人开始依赖不断退化的土地供应的淡水。在严重干旱频发的情况下，这是不可持续的。

制定干旱问题(包括水资源短缺)倡导性政策框架的法律授权

6. 《公约》应在关于干旱和水资源短缺问题的国际议程中发挥重要作用，说服各国政府将可持续的土地和水管理做法纳入国家政策平台，以加强人口和生态系统的抗旱能力。
7. 《公约》第 10 条称国家行动方案应当“提高国家气候、气象和水文能力以及增强提供干旱早期预警的手段”，可包括：

² 本文件中，“干旱”包括水资源短缺。

³ 世界水资源评估方案。2009 年。《世界水资源发展报告第三版——变化世界中的水资源》可查阅：
<<http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/wwdr/wwdr3-2009/>>。

(a) 酌情建立和/或加强早期预警系统，包括地方和国家设施及分区域和区域两级的联合系统，以及援助环境导致的流离失所者的机制；

(b) 加强考虑到季节和年度气候预测的防旱抗旱工作，包括地方、国家、分区域和区域各级的干旱应急计划；

(c) 酌情建立和/或加强粮食安全系统包括储存和销售设施，尤其是在农村地区；

(d) 制订可以为易发生干旱地区创收的另谋生计项目；以及

(e) 为农作物和牲畜制订可持续的灌溉方案。

8. 此外，在第 8/COP.9 号决定第 6 段中，缔约方会议请秘书处制定处理荒漠化/土地退化和干旱不利影响的倡导性政策框架，同时铭记国土治理和性别敏感办法的潜力，并定期向受灾国家和其他关键的利益相关者通报可能有助于实施行动方案的这类程序；

9. 在缔约方会议第 9/COP.10 号决定第 11(a)段中，缔约方会议还请执行秘书继续与国家联络点协商，考虑采取顾及性别特征的方针，继续制定关于干旱专题的补充的倡导性政策框架；

10. 在执行干旱问题倡导性政策框架时，《荒漠化公约》秘书处将倡导以干旱和可持续土地管理为重点，通过国家行动方案、次区域行动方案、区域行动方案和专题方案网，有针对性地制定干旱政策、开展研究，提供缓解干旱的资金。⁴本框架将提供便利，方法包括：倡导缔约方制定国家干旱管理政策，确保国际政策层面上议程的一致性，调集现有资金、机构和技术资源，以便从缓解干旱影响的工作中获得最大收益。

二. 制定干旱问题(包括水资源短缺)倡导性政策框架的理由

A. 问题

11. 古往今来，干旱给人类带来痛苦，非洲角和萨赫勒地区近期的干旱表明，干旱仍然对生态系统和社会造成巨大危害。全球范围内因干旱引起的危机频发，影响正迅速扩大，每次发生旱灾时，都有更多人因此遭殃。在全球范围内，甚至在非旱地国家，干旱发生频率都在增加。

12. 在发展中国家，干旱加剧了当地人口的脆弱性。弱势民众的抗旱能力有限；不仅因为干旱发生频率不断增加，而且因为生计不保、资源储备减少、资源冲突不断、土地和水资源获取的变化，以及洪水和疾病暴发等其他冲击。

⁴ 第 8/COP.9 号决定，第 9 段。

13. 干旱的主要影响不仅体现在人类生活上，而且越来越多地体现为短期和长期的经济损失。干旱经常殃及农业，因此影响粮食安全、能源和工业生产，还殃及自然环境，包括野生动植物。

14. 在可预见的将来，气候变化可能将改变干旱规律，加大极端天气的频率和严重性；这进一步加剧人员 and 经济损失风险。因此，预计干旱可能引发族群暴力和国内战争，甚至在未来引发国与国之间的战争。

B. 对当前干旱管理形势的分析

15. 虽然普遍认为干旱是一种逐渐滋长的自然灾害，是自然界气候多变的结果，但是大多数受灾国家缺乏全面的水资源和干旱管理政策，这些政策将为生计、资产和/或环境提供前瞻性保护，并确立提高长期抗御力的土地使用做法。近年来，全世界的人们都越来越担心，鉴于不断变化的气候条件，干旱的发生频率和严重程度可能增加。

16. 全球大多数地区采用反应式的灾害管理应对干旱时，这种方式存在不及时、协调不足和不统一的缺点。因此，灾害在全球造成的经济、社会和环境影响大大增加。协调的国家干旱管理政策包括为决策者及时提供信息的有效监督和早期预警系统、有效的影响评估程序、前瞻性风险管理措施、旨在加强应对能力的备灾计划，以及旨在减少干旱影响的有效应急方案，如果没有这样的政策，国家将继续以反应式的灾害管理模式应对干旱。从长期的社会和经济影响来看，干旱是目前破坏性最大的自然灾害。因此，鉴于旱灾频发，各国今后需采取前瞻性行动，以满足抗灾的相关要求。

C. 干旱管理政策的不足之处

17. 古往今来，旱灾时常发生，对不同的社会经济部门造成巨大影响，但是除澳大利亚外，世界各国尚未携手制定国家干旱管理政策。当前措施往往局限于灾后应对。用的最多，也是发展中国家和发达国家最常采取的方针就是灾后政府(或非政府)干预。干预形式通常是救援措施，例如旨在向灾民(或受灾最严重的人)提供资金或食物、家畜饲料和水等其他具体援助的紧急救援方案。

18. 这种反应式的方针无法减轻受灾群体的脆弱性，因为它没有鼓励可持续性 or 加强能力。接受这类援助的人既没有改变其行为，也缺乏采取资源管理做法的动力，而这些做法正是改变行为以方便援助所必需的。受灾群体未必有机会参与制定抗旱措施。继续依赖外部提供救援无法促进受灾群体自力更生。为了长期的能力建设和抗旱能力，需要增加地方性的决策制定、参与式管理和可预见的投资。

19. 传统援助方针的另一个缺陷是无法及时提供援助。灾民通常在数周或数月后才得到援助，那时通常已经错过援助发挥最大作用的时机。需重新思考在发生干旱时，地方和中央政府应如何应对并推动特别是脆弱受灾群体的改变。

20. 干旱政策的另一个，也是更加复杂的方针是制定影响前或风险管理方案，以便通过干旱预测降低脆弱性和影响。这些措施称为缓解措施，其影响通常没有固定形式，故而不大容易与干旱联系起来。这些措施包括建立综合的早期预警系统；加强季节性干旱预测；更加强调水收集和水土保持；更加有效地利用地下水资源；修建水库；连接相邻社区的水供给；采取干旱风险规划措施；增强意识；开展教育。在某些国家，干旱缓解方案中有干旱险；特殊情况下可考虑使用。

21. 干旱政策中还有一个方针越来越受欢迎，即制定和实施备灾计划和方案，包括政府或其他利害关系方在干旱发生前制定、在非干旱时期维持的组织框架和行动安排。这种方针是为了加强机构能力，侧重加强各级政府之间，以及从干旱管理中获益的众多私营和公私合营组织(例如：社区、自然资源管理方、公共事业、农业综合企业、农业组织、中小学和大学)之间的协调与合作。

22. 在国际一级，有干旱管理政策方面的知识和最佳做法汇编(见附件一)。不过，鉴于与旱灾有关的人力成本基本可以通过适当的战略对策避免，应当在各级制定更加全面的干旱管理政策，并培养能够全面利用至少上文第 19 至 21 段所指三项方针的有关能力。

D. 弥补干旱管理政策不足的机会

23. 应对干旱和水资源短缺频发的当前政策基础薄弱，容易导致被动应对。制定并采纳干旱管理政策将帮助当地社区、政府、私营部门、捐助方、联合国及非政府组织改变应对长期干旱形势的方针。将弥补当前方针的不足，主要是国家和地方一级在政策制定方面缺乏联系。

24. 长期战略和政策若能将拯救生命所需的主要干预——短期措施(危机应对，例如人道主义救援)与预防灾害、帮助恢复和支持生计的措施结合起来，效果将更好。应强调加强抗御力、改善生计、转让技术，以及系统地评估干旱影响，并将干旱管理举措纳入《荒漠化公约》的政策和治理结构。

25. 具体而言，制定并强调国家干旱管理政策将使利害关系方能够在干旱的具体影响显现之前便系统、持续地采取应对措施。国家干旱管理政策将有助于消除脆弱性的根源，积极降低风险，而不是侧重单个危机。这应当能够继而加强人们对干旱影响的抗御力，拯救生命，同时推进旨在改善和维持脆弱群体和整个社会福利的其他发展目标。

26. 国家干旱管理政策的目的是不论资源是否充足，增进当地社区高效和有效应对旱灾的能力，加强灾民在旱灾期间的应对能力。这将使他们能够利用可获得的机会改善生计。因此，长远来看，干旱管理政策必须加强民众的抗御力，使他们不太需要政府、捐助方及其他利害关系方提供救援形式的干预。

27. 各国在制定和通过干旱管理政策时，应当简化背景因素，例如影响干旱应对行动的做法、能力、结构、战略和原理。此外，各国还将确定需要加强的机制、系统、职能和机构，使人们能够建立并巩固生计的抗御力，制定更加及时和适当的应对措施，在今后发生干旱时保护生计和拯救生命。这类干旱管理政策将使人们能够持续地实施生计干预，特别是在时机是成败关键的情况下进行干预。

28. 国家干旱管理政策将确立一套明确的原则或业务指南，规范对干旱及其影响的管理。在国家一级，对于条件、生态系统功能性、人口群体和经济部门类似的灾区，应当保持政策一致，政策还应当符合国家、区域和全球的可持续发展目标。

29. 国家干旱(和水资源短缺)管理政策应当推动以制定和实施影响前方案和备灾计划为重点的战略，以及旨在降低干旱风险的政策。这些政策通过建立和巩固生计的抗御力，制定更加及时和适当的保护生计和生命的应对措施，消除脆弱性的根源，以及通过管理干旱带来的风险，而不是侧重单个危机，从而降低风险。

30. 国家干旱管理政策不是孤立的。他们将被列入国内和国际举措并作为其补充，例如《荒漠化公约》的国家适应计划、区域行动方案和次区域行动方案、灾害管理和降低风险政策，国家气候变化适应政策和计划，以及综合水土保持管理做法、政策和计划。这种协调的方针符合《公约》本身以及推进执行《公约》的十年战略规划和框架(2008-2018年)，将增强当地生计的抗御力、加强粮食安全、降低贫困人口的脆弱性，推动地方经济增长。

三. 潜在的重要政策干预措施：干旱(包括水资源短缺)的重要对策

31. 有效应对干旱离不开国家干旱管理政策。政策要想切实有效，应当实现有助于在灾区拯救生命和生计的模式转换。与此同时，对制定有效的干旱管理政策的一致支持将使国际社会和国家政府能够致力于大幅调整国际和国内应对干旱的方式。

有效应对干旱(包括水资源短缺)的国家干旱管理政策所需的关键行动

32. 建议采取以下举措，它们对国家干旱管理政策实现有效应对干旱的目标至关重要。

1. 从应对旱灾转为降低干旱风险

33. 预计各国的干旱管理政策将鼓励降低干旱风险，这将拯救更多生命，而不是继续采取被动的旱灾应对方针，这种方针总是导致更多人痛苦和丧生。干旱管理政策将指引国家和地方努力加强机构能力，以期在极易遭受干旱和其他自然灾害的地方采取有效的备灾和缓解方案。这些政策是为了在降低灾害风险的背景下，应对受灾国家面对的主要挑战，同时侧重国家的社会和经济的发展。鉴于受灾

国家越来越经不起干旱的危害，以及干旱对这些国家的发展议程造成的挑战，国家干旱管理政策将使受灾国家能够选择将降低和管理干旱风险作为今后的方针。

34. 建议采取以下行动，以便从应对旱灾转为降低干旱风险：

- (a) 实施强化国家干旱政策目标并建立及时应对干旱的新能力的应急和救援措施；
- (b) 确定减少当前干旱影响并降低今后脆弱性的应急措施；
- (c) 确保及时向受灾社区/部门提供援助；
- (d) 通过以下方式，将旱灾救援与备灾及缓解行动结合起来：
 - (一) 让利害关系方明确风险和缓解措施；
 - (二) 收集和分析信息；
 - (三) 利用基于证据的进程评估风险，并将缓解措施列为优先事项；
 - (四) 明确制度瓶颈和安排；以及
 - (五) 通过将有关措施与当前政策和机构联系起来，将干旱管理系统作为重点。

2. 在脆弱社区建立应对旱灾的能力和抗御力

35. 这类干旱管理政策将使受灾国在脆弱社区建立并加强高效和有效应对旱灾的能力，加强它们在干旱期间，尤其是资源短缺时的应对能力。这是一项重要挑战，需要得到政策指导，以拯救生命和脆弱社区的生计。建立这种能力和抗御力将减少对政府、捐助方及其他利害关系方以旱灾援助和/或救援形式提供的不可持续的干预的需求。因此，必须更加重视促进减少干旱风险、为建立当地能力和抗御力提供指导的国家干旱管理政策，以期促进有效备灾。

36. 建议采取以下行动，以加强能力建设和抗御力：

- (a) 提供更多培训机会，以便人们更好地理解脆弱群体以及在脆弱部门内部可以如何运用季节性预测和决策支持工具，加强抗御力/应对能力和备灾；
- (b) 制定在各部门开展培训的商业(管理)计划；
- (c) 强调教员培训(例如推广人员)，以便更好地向使用者介绍政策工具；
- (d) 强调在管理和政策中使用气候风险信息；
- (e) 了解使用者的需求，让他们从一开始就参与决策支持工具的开发；
- (f) 运用媒体让公众和政策制定者参与，收集关于紧急救援措施效果的反馈意见；
- (g) 评估早期预警和决策支持工具，以及支持备灾规划和政策制定的方法的可获得性；

(h) 评估干旱风险，查明潜在威胁，确定当地人民和经济部门对干旱的脆弱程度，以及国内不同地区脆弱性的差异；

(i) 评估国内目前的干旱早期预警能力，明确不足之处，并采取适当措施，培养和加强国内提供有效的干旱早期预警的能力；

(j) 与干旱殃及的各部门的使用者密切合作，评估当前的决策支持工具，并通过利用创新成果改进这些工具，以便为决策制定提供更加及时的信息；

(k) 推动气象学家、水文学家、土壤学家、生态学家、农学家、社会/行为学家、医疗系统专家以及其他人在收集数据(包括元数据)和为使用者提供抗旱产品方面的跨部门合作；以及

(l) 培养使用者和政策制定者的能力。

3. 将减少干旱风险的干预措施与发展有抗御力的生计及可持续的土地管理联系起来

37. 干旱管理政策要想有效，必须将减少干旱风险的干预措施视为并作为国家发展行动的一部分。同时，国家发展战略和方案也需要考虑到旱灾风险，以避免或尽可能降低旱灾对弱势人群生活和生计的负面影响。因此，干旱管理政策应当使受灾国认识到，鉴于旱灾导致的破坏和损失，以及帮助弱势人群恢复生活所需的巨大成本，必须全面减少旱灾风险，才能实现可持续发展。这也符合将干旱管理政策作为可持续发展的重点和减少干旱风险的优先事项的需要。这增强了脆弱群体对干旱影响的承受力，同时推进了旨在改善和维持脆弱群体和广大民众福利的其他发展目标。

38. 建议采取以下行动，以加强减少干旱风险与发展有抗御力的生计及可持续土地管理之间的联系：

(a) 制定为粮食安全、环境保护、土地利用和土地权提供支持的全面发展政策；

(b) 在可持续发展和减少风险的背景下，将干旱管理举措作为当务之急；

(c) 通过加强干旱期间(不论是否存在资源短缺)的应对能力，增强当地社区高效和有效应对旱灾的能力；以及

(d) 加强抗御力，减少对政府、捐助方及其他利害关系方以旱灾援助形式提供的不可持续的干预的需求。

4. 制定进一步的干旱管理措施，以加强备灾和缓解行动

39. 制定并通过有效的干旱管理政策应当有助于制定减少干旱对脆弱群体影响的措施。这些政策应当切实纳入受灾国更大的社会经济和政治发展议程中，从而建立有抗御力和可持续的生活和生计。各国还将通过这些政策，弥补干旱管理中可能存在的不足，包括缺乏适当的政策框架或未能执行干旱政策；这往往会限制

主要受灾部门，例如农业(侧重小农户)、卫生、教育和环境部门的发展。这些政策还将把干旱管理与支持粮食安全、环境保护、土地利用和土地权的其他政策(这些政策可以缓和资源争夺战，防止生产力下降)联系起来，这种联系必不可少。国家干旱管理政策应当列入国家政策和国际框架，例如国家行动方案。

40. 建议采取以下行动，以加强防旱和缓解：

- (a) 在社区一级采取行动，从研究转向政策执行；
- (b) 协助制定、考查和改进降低脆弱性和加强社区能力的方法和措施，例如干旱风险管理、方法的成本效益评估和分析，以及对灾害社会影响的评估；
- (c) 通过政府和机构的支持，提供信息、激励措施，以及关于地方一级加强能力和开展有针对性行动的成功方式的法律框架，以加强灾民和非灾民的能力；
- (d) 开展缓解行动；
- (e) 利用干旱影响记录开展概率风险评估，并促进前瞻性规划和干旱风险管理；
- (f) 考虑农民，包括小农户的发展能力，或高效获取和利用农业生产信息的能力；
- (g) 制定强化风险管理是国家干旱政策重点，同时推动环境管理的抗旱措施；
- (h) 指出可向脆弱部门/群体提供哪些激励措施，以鼓励采取基于风险的管理措施为国家干旱政策提供支持；以及
- (i) 加强研究工作，以推动可持续发展，增强社区对干旱的抗御力。

5. 建立有效和可靠的早期预警系统、备灾水平和执行能力

41. 潜在的干旱管理政策应当促进和/或推动在受灾国的适当级别建立有效和可靠的干旱早期预警系统、备灾水平和执行能力。这是因为应对干旱风险的干预是否及时，取决于有效的早期预警系统和干旱监测系统，包括应急基金的备灾水平和实地执行能力。

42. 干旱管理政策将推动扶持型环境，有利于在国家一级建立和采用前瞻性早期预警系统，向脆弱人群、政府及其合作方(捐助方及其他行为方)通报任何即将发生的干旱或严重缺水情况；这有助于执行实地措施，避免消极应对。干旱管理政策还将帮助决策者更好地理解脆弱人群的生计系统，就缓解干旱风险的内容达成必要共识，从而避免紧急应对，并推动提高生计可持续性和拯救生命的恢复活动。

43. 关于实地执行，干旱管理政策将促进明确、制定、计划、协调并执行及时、可持续的生计干预的能力，这些干预将加强脆弱群体的抗御力。制定并通过

干旱管理政策应当能够使政府关键部委和联合国协调机构摆脱刻板的规划系统和低效率的财务程序，它们经常影响实地覆盖率和技术专长方面的执行能力。

44. 干旱管理政策还将推动建立多利害关系方形式的国家干旱应急基金，由利害关系方向干旱缓解和救援提供资金。这样，政府和私营部门将能够采取与干旱和水资源短缺有关的有效和适当的干预措施，包括备灾、缓解、应急和恢复措施。

45. 建议采取以下行动，以加强早期预警系统、备灾水平和执行能力：

(a) 通过地方和国家一级有效的决策制定，持续提供关于干旱给不同生态区域及其人民带来的潜在风险的统一信息；

(b) 从现有举措开始，在国家一级建立并支持综合、有效和直接的干旱监测综合系统；

(c) 评估现有网络，特别是气象、水文和生态网络是否足以达到干旱监测和数据质量的要求；

(d) 研究当前数据收集和分析的安排及程序，确保各行政级别众多机构和部委之间的协调；

(e) 使当地社区能够开发创新的终端产品、信息和/或决策支持工具，并确保及时提供给最终使用者；

(f) 推动建立早期预警信息系统并提高其有效性，该系统包括预报生计可能受到的影响；

(g) 加强地方和中央系统监测和实时记录地方干旱影响的能力；

(h) 加强地方和中央衡量和控制数据质量的能力，并确保干旱早期预警信息系统能够服务到当地社区(且当地社区可以使用该系统)；以及

(i) 帮助制定充分协调生计保护、早期预警与救援和应对的备选办法。

6. 在各级加强协调

46. 干旱管理政策要想建立抗御力，必须在各级推动有效的协调。因此，干旱管理政策应通过将协调干旱应对的孤立结构与长期发展事项结合起来，包括保险计划、预算和税收/补贴计划等与资金有关的发展事项，努力合并可能分散在不同级别的协调系统。

47. 应强调，这些框架必须与长期的社会经济发展相结合，才能有效减少和管理干旱风险。因此，这些政策要想在长期发挥作用，必须加深这一认识，即干旱管理必须通过跨部门框架，以协调和统一的方式进行。

48. 建议采取以下行动，以便在各级加强协调：

(a) 理解导致脆弱和加强社区抗御力的自然进程和人类活动；

(b) 弥补知识、信息类型和方法上的不足，这些不足妨碍了方法的有效运用。关键目标是“加强受灾民众的能力”；

(c) 通过参与为知情、负责和系统的行动提供支持的全球结构，与面临旱灾的社区合作并提供支持，以便其在长期更加负责和公平地管理自身环境；

(d) 鼓励政府部门以及公共和私营机构提供支持和激励措施，统一数据和协调决策支持，并以法律形式确立加强能力和行动的成功途径；

(e) 归纳干旱影响，绘制脆弱性地图，同时适当考虑弱势群体和社区；

(f) 加强对干旱脆弱性和影响评估的跨部门协调，在所涉利害关系方之间建立伙伴关系，以开展影响评估；以及

(g) 制定衡量干旱影响和脆弱性因素重要性的标准，明确影响力大的缓解行动。

49. 建议采取以下行动，以提高对不作为的代价的认识：

(a) 记录以往旱灾带来的社会、环境和经济影响，以及对所有级别和部门的影响趋势；

(b) 从成本效益角度，理解以被动的灾后应急救援为主的政府政策与基于风险的政府政策孰优孰劣，后者强调缓解行动，这些行动能够减少影响和对政府干预的需要；以及

(c) 计算出将科学知识转化为政策行动的机会成本。

四. 审查和报告执行进展的拟议方法

50. 在科学和技术委员会(科技委)、《公约》执行情况审评委员会(审评委)和缔约方会议的每届会议上：

(a) 科技委不妨在关于科学与政策衔接的届会工作方案上确立一个常设议程项目，以审议具体专题，例如干旱，并提供相关科学信息；

(b) 在审评委的每届会议上，科技委应当在缔约方会议的指导下，与缔约方就选列专题的政策问题开展对话，以阐述其研究结果，并就应对选列专题问题的负面影响可采取的潜在措施，提出具体建议；

(c) 缔约方及其他利害关系方应就基于科学的荒漠化、土地退化和干旱相关政策，向审评委提交意见；秘书处将汇编这些意见，用于今后为制定倡导性政策框架而开展的交流。

五. 结论

51. 国家干旱管理政策应当确立一套明确的原则或业务指南，规范对干旱及其影响的管理。在国家一级，对于条件、生态系统功能性、人口群体和经济部门类似的灾区，应当保持政策一致，政策还应当符合国家、区域和全球的可持续发展目标。因此，政策应当使国家能够：

(a) 将前瞻性缓解和规划措施、风险管理、地方一级的能力建设、公共宣传以及环境和自然资源管理作为有效的国家干旱政策的核心内容；

(b) 加大国家、区域和全球合作，包括观测网络和信息提供系统方面的合作，以提高公众对于干旱的认识和准备程度；

(c) 将政府、公私合营和私人保险及财务战略全面纳入防旱计划；

(d) 确认需要建立全国紧急救援安全网，其基础是对自然资源的稳妥管理和各级政府的自救；以及

(e) 将干旱方案与国家优先事项政策联系起来，以便以使用者为导向，切实、高效地作出应对。

52. 各国在制定国家干旱管理政策时面临复杂挑战，需要拿出政治意愿，并采取协调方针，让各级政府和不同的利害关系方参与政策制定过程。防旱和缓解计划的制定过程是一个逐步的规划过程，需要所有利害关系方参与。

六. 缔约方提出的行动建议

53. 《公约》执行情况审评委员会(审评委)不妨向缔约方会议提议关于批准干旱⁵问题倡导性政策框架的决定，正文如下：

缔约方会议，

1. 请秘书处在《公约》执行情况审评委员会的会议上报告倡导性政策框架的执行情况，

2. 确认如倡导性政策框架所述，在《联合国防治荒漠化公约》任务中加强国家和国际一级的政策相关行动，将为执行第 8/COP.9 和 9/COP.10 号决定(内容涉及制定这类专题性质的政策框架)，以便在考虑性别因素的基础上应对荒漠化、土地退化和干旱的影响提供必要条件，

3. 建议秘书处和《公约》机构加强科学与政策的衔接，并将重点放在干旱(包括水资源短缺)问题上，

⁵ 本文件中，“干旱”包括水资源短缺。

4. 强调将《联合国防治荒漠化公约》关于干旱和水管理的倡导性政策框架纳入联合国机构持续的国际努力至关重要，众多全球协定和论坛也确认了这一点，

5. 确认与世界气象组织、联合国粮食及农业组织以及《联合国防治荒漠化公约》秘书处联合举办的国家干旱问题政策高级别会议的结果十分重要，

6. 呼吁发展伙伴——全球环境基金、全球机制、国际和区域开发银行，以及其他金融机构通过为执行干旱(包括水资源短缺)问题倡导性政策框架及时提供额外、充分和可获得的资源，为秘书处和《公约》进程提供帮助。

54. 缔约方会议不妨决定：

- 批准关于干旱和水资源短缺的倡导性政策框架；
- 呼吁各国制定国家干旱管理政策，并将其纳入现有计划和机制，特别是国家行动方案。
- 请全球机制发展伙伴关系，以便通过国家行动方案执行干旱管理政策。
- 请科学和技术委员会回顾关于干旱和水资源短缺的现有知识，建议记载并弥补欠缺的知识，特别是气候变化假设情景方面的知识缺口。
- 请第三次科学会议的主办方提交文件，说明传统科学知识可为干旱管理和政策作出的贡献；
- 请秘书处和合作伙伴在 2013 年“世界防治荒漠化日”成果的基础上，以水资源和干旱问题为重点继续努力，并继续就全球干旱和缺水环境开展宣传和提高认识活动；
- 请秘书处审查综合传播战略，加强关于干旱和水资源短缺的内容；
- 请全球基金制定指导方针并支持缔约国就干旱和水资源短缺问题开展可预见的筹资，例如制定保险计划等；
- 请秘书处协助以文件(包括手册及其他出版物)记录特别是区域一级推动教育、能力建设和培训的经验教训；
- 请《公约》执行情况审评委员会通过秘书处组织关于干旱和水资源短缺的政策对话，以监测本倡导性政策框架的执行进展。
- 制定国家干旱管理政策，将干旱政策纳入作为主要执行工具的国家行动方案和次区域行动方案，并为今后的报告周期记录经验；
- 将防旱计划纳入更广泛的可持续土地管理方针，例如资源管理和水/流域管理方针；
- 加大对退化土地上各项可持续土地管理行动的投资，以帮助当地(粮食)生产者更好地适应干旱；

- 制定并加强当前土地管理网络，以支持社区一级就干旱和水资源短缺问题分享知识、进行协调和建立伙伴关系；
- 加强与干旱有关的社区组织能力建设方案，并与民间社会组织及企业界建立伙伴关系，以便在当地采取行动。

Annex

[English only]

Compendium of drought management practices at national level from the High-level Meeting on National Drought Policy

The key elements in a national drought⁶ management policy (NDMP) fall under the following areas:

- Promoting standard approaches to vulnerability and impact assessments;
- Implementing effective drought monitoring and early warning systems;
- Enhancing preparedness and mitigation actions;
- Implementing emergency response and recovery measures that reinforce NDMP goals; and
- Understanding the cost of inaction.

These proposed elements in each of the five areas are described in the following.

A. Promoting standard approaches to vulnerability and impact assessments

1. Understanding the natural processes and human activities that contribute to vulnerability and community resilience and how these will be integrated to inform risk reduction and management. This involves:
 - (a) Addressing the gaps in knowledge, types of information and methodologies that prevent the effective application of these methodologies. A key goal is the enablement of affected populations;
 - (b) Working with communities (broadly defined) facing hazards to manage their own environments more responsibly and equitably over the long term by participating in a global structure that supports informed, responsible and systematic actions to improve local conditions in vulnerable regions; and
 - (c) Encouraging governments, departments and institutions, both public and private, to provide support and incentives, coordinate data collection and dissemination, provide decision support, and legitimize successful approaches to increasing capacity and action.
2. Characterize and integrate drought-related impacts, vulnerability and risk information to identify proactive mitigation actions and measures.
3. Record drought impacts on and conduct risk assessments for vulnerable economic sectors, including but not limited to:
 - (a) Rain-fed agricultural production:
 - (i) Impact(s): reduced or no yields; increases in extreme events; and accelerating negative trends in rainfed agriculture productivity;

⁶ In this document, 'drought' always includes water scarcity.

- (ii) Potential mitigations: imports (short term); choosing to sow different crops or not sow at all (short term); and application of improved agronomic practices (e.g. no tillage);
- (b) Irrigated agricultural production:
 - (i) Impact(s): reduced yields; vulnerability of water resources; reduced water quantity; and poor water quality;
 - (ii) Potential mitigations: water rationing; review of water allocation; sowing dryland crops; and introduction of water banks for the temporary transfer of water rights;
- (c) Livestock production:
 - (i) Impacts: weight loss; mortality; destocking; increased incidence of diseases; and lower fertility and reproduction rates;
 - (ii) Potential mitigations: destocking; feed distribution; cattle parking/relocation of herds; nomadic migration; and use of special reserved areas (stock routes and stock reserves);
- (d) Water:
 - (i) Impacts: degraded water quality (salinity, biochemical oxygen demand/chemical oxygen demand); surface water shortages; overdrawing and depletion of groundwater; and increased competition and conflict over water;
 - (ii) Potential mitigations: ex ante identification of supplemental and alternative sources of water; use of reserve sources of groundwater; technical optimization of water resources; water laws and rules for special circumstances; dry-year options (sale, expropriation, restrictions) using critical drought thresholds; development of critical thresholds; prediction of future water use to determine zoning; realization of water reservoirs or farm ponds; interconnection of urban or rural water supply systems; and establishment of a water security plan for all rural and urban areas with respect to climate change;
- (e) Environment:
 - (i) Impacts: ecosystem degradation; loss of biodiversity; species migration and extinction; landscape change and wind erosion; increased risk of wildfires; and impacts on fisheries;
 - (ii) Potential mitigations: maintenance of environmental flows;
- (f) Transportation:
 - (i) Impacts: reduced transportation and navigation on rivers and lakes;
 - (ii) Potential mitigations: preparation of alternate transportation plans using railways and roadways;
- (g) Health:
 - (i) Impacts: increases in morbidity and mortality; increased suicide rates; incidence of wind-, dust- and vector-borne diseases and respiratory illnesses; degradation of sanitation; decreasing levels of nutrition; depression, trauma and suicide; and increased use of and dependence on drugs and alcohol;

- (ii) Potential mitigations: food supplements; food stockpiling; more robust social safety nets; improved access to mental and physical health care; and access to counselling services;
- (h) Tourism and recreation:
 - (i) Impact(s): loss of recreation areas, decline of tourism revenue; and reduction in taxes collected;
 - (ii) Potential mitigations: improved management of water reservoirs; and reallocation of water supplies between user sectors;
- (i) Energy:
 - (i) Impacts: decreased hydropower production; brownouts and blackouts; increased demand; and destruction of transmission lines;
 - (ii) Potential mitigations: energy restrictions; improvements in efficiency; alternative energy supplies; and diversification of energy sources;
- (j) Society:
 - (i) Impacts: migration and loss of community; decreased marriage rates; increased divorce rates; increased suicide rates; increased conflicts; loss of assets and reduced property values; increased theft and crime; impacts on traditional cultures and practices; gender inequality; and migration of population from farm/rural areas to urban areas;
 - (ii) Potential mitigations: social protection and cash-transfer programmes; diversification of rural livelihoods; employment programmes and schemes; and provision of counselling services;
- (k) Education:
 - (i) Impacts: school dropout rates (short-term); and lower school enrolment (longer term);
 - (ii) Potential mitigations: targeted social protection (e.g. Bolsa Família); and mid-day meal schemes to prevent school dropouts;
- (l) Cost of emergency response programs:
 - (i) Impacts: amount spent on relief and response;
 - (ii) Potential mitigations: insurance schemes; better targeted response programmes; and improved monitoring of impact sectors to determine when measures should be implemented; and
- (m) Secondary and tertiary impacts on economic productivity:
 - (i) Impacts: loss of income and productivity; opportunity costs; and higher personal debt levels;
 - (ii) Potential mitigation: employment guarantee schemes; and loan waivers.

4. Elicit information from key stakeholders on important issues and their needs for seasonal and longer-term climate information.
5. Assess socioeconomic and management characteristics, capacity-mapping and trends in countries/communities of concern, and include standards for data collection.
6. Develop risk assessments and profiles showing physical, social, economic and environmental pressure on a community at global, regional and local scale to determine who and what is at risk and why.
7. Understand effective decision-making in the context of drought risk management, i.e. what it is and how it can be improved. This involves:
 - (a) Conducting research on decision-making, risk perceptions and the implementation of risk management and mitigation programmes; and
 - (b) Including critical actors at each jurisdictional level as well as their risk assumptions, their needs for different types of information, and the design of an information infrastructure that would support their decisions at critical entry points.
8. Conduct risk profiles prior to the onset of droughts and record drought impacts on vulnerable populations. Risk profiles should take vulnerable groups into account, including but not limited to:
 - (a) Women;
 - (b) Children;
 - (c) The elderly;
 - (d) The invalid, infirm and ill;
 - (e) The landless;
 - (f) Farmers;
 - (g) Pastoralists;
 - (h) Marginalized communities; and
 - (i) Indigenous communities and populations.
9. Develop, test and improve methodologies and measure progress in reducing vulnerability and enhancing community capacity, e.g. with regard to drought risk management, the cost-effectiveness of methodologies and analyses, and societal impacts of catastrophic events.
10. Strengthen cross-sectoral coordination in assessing drought vulnerability and impacts as well as partnerships among the state, academia and the private sector for conducting impact assessments. This involves:
 - (a) Assessing impediments and opportunities related to the flow of information, including issues of credibility, legitimacy, compatibility (appropriate scale, content, ability to be matched with existing practices) and acceptability; and
 - (b) Developing/testing common drought risk reduction practices and coordinating information flow from different organizations in easily understandable language for all affected communities in countries and communities at risk.

11. Develop and mainstream the effectiveness of impact assessments for early warning information systems that include warnings for potential impacts on livelihoods.
12. Build capacities of affected populations through support from governments and institutions, the provision of incentives, and the legitimization of successful approaches to increasing capacity and action at local level.
13. Identify and assess vulnerable people and communities. Factors to consider include, but are not limited to, the following:
 - (a) Gender;
 - (b) Age;
 - (c) Ethnicity;
 - (d) Political status;
 - (e) Dependency on agriculture;
 - (f) Level of wealth/poverty and human development;
 - (g) Education status;
 - (h) Access to natural assets;
 - (i) Access to alternative supplies of water and fodder;
 - (j) Access to markets;
 - (k) Baseline health;
 - (l) Livelihood/employment options and access to alternative/supplemental employment;
 - (m) Social networks and level of isolation;
 - (n) Access to infrastructure;
 - (o) Underlying climate variability; and
 - (p) Previous exposure to droughts, floods and other hazards.
14. Develop criteria to weigh the importance of drought impacts and vulnerability factors and to identify high-leverage mitigation actions.
15. Develop mitigation actions for various points during drought episodes to enable the implementation of appropriate mitigation actions at the outset and termination. This involves:
 - (a) Using drought impact records to develop probabilistic drought-risk assessments and facilitate proactive planning and drought-risk management; and
 - (b) Considering the abilities of farmers to receive and use information.

16. Systematically monitor and record local drought impacts in real time using drought early warning systems; this information should be made available in a timely fashion to local communities.
17. Develop common methodologies and terminology to assess drought vulnerability for determining drought risk at multiple spatial scales and across political borders.

B. Implementing effective drought monitoring and early warning systems

18. Identify and evaluate existing comprehensive, integrated drought monitoring systems that incorporate multiple climate, water, soil and crop parameters and socioeconomic and environmental indicators and indices to fully determine the magnitude, spatial extent, trends, duration, and potential impacts of droughts. This involves:
 - (a) Establishing and supporting a comprehensive and effective integrated drought monitoring system at national level;
 - (b) Ensuring that relevant parameters for climate, water, crops and soil, and socioeconomic and environmental indicators and indices are collected and made available through the system;
 - (c) Placing more emphasis on supporting research to determine the magnitude, spatial extent, trends, duration and potential impact of droughts on social, environmental and economic aspects in the region/country;
 - (d) Using an appropriate classification system for different types of droughts – e.g. meteorological, agricultural, hydrological and socioeconomic droughts – while regularly communicating drought information; and
 - (e) Developing effective delivery systems for the dissemination of information to the user community for improved decision-making.
19. Assess the adequacy of networks, particularly meteorological, hydrological and ecological networks, for drought monitoring and data quality. This includes:
 - (a) Ensuring that an adequate and coordinated network of meteorological, hydrological and ecological stations is established in the country to provide good spatial characterization of droughts;
 - (b) Ensuring that the meteorological, hydrological and ecological stations have the necessary instruments in good working condition to provide relevant data;
 - (c) Taking full advantage of advances in instrumentation technology, such as Data Collection Platforms (DCPs), automatic weather stations, telemetry and hydroprobes in automating data collection;
 - (d) Using gridded products to compensate for gaps in station networks to create a time series using climate monitoring products;
 - (e) Encouraging the wider availability and use of remote sensing data/products and providing training to natural resource managers and policymakers on properly interpreting these products;
 - (f) Implementing effective data management and data quality control systems, including proxy data consistent with World Meteorological Organization quality control procedures;

-
- (g) Ensuring the long-term sustainability of meteorological, hydrological and ecological networks in order to regularly provide the user community with relevant information; and
 - (h) Assessing the needs of the user community in terms of specific information requirements for making time sensitive decisions.
20. Examine current arrangements and procedures for coordinating the collection and analysis of meteorological, hydrological and ecological data and eliminate fragmentation between various agencies and ministries at the different administrative levels. This involves:
- (a) Encouraging close collaboration among meteorological, hydrological, ecological and other relevant agencies in collecting comprehensive drought data;
 - (b) Developing standard protocols for data collection and analysis;
 - (c) Establishing a centralized authority for the analysis and quality control of meteorological, hydrological and ecological data to generate integrated products related to droughts; and
 - (d) Determining the most user-friendly format for the integrated data for easier access and use by both researchers and practitioners.
21. Evaluate existing procedures for data sharing during drought, including aspects such as monitoring, preparedness, mitigation and response. These involve:
- (a) Reviewing existing data sharing practices and procedures;
 - (b) Encouraging regular interaction between all relevant agencies and institutions at local, national, and regional level in developing specific drought products for all sectors affected by droughts;
 - (c) Adopting standards for sharing data and products with all sectors concerned with the impacts of droughts;
 - (d) Promoting a policy of free, open and unrestricted exchange of data, information and products with all interested agencies and institutions in the public and private sectors; and
 - (e) Establishing a rigorous monitoring system to ensure that data, information and products are shared freely between institutions and agencies in a timely manner.
22. Assess the availability of early warning and decision-support tools and methodologies in support of drought preparedness planning and policy development. This involves:
- (a) Comprehensively assessing drought risks; identifying potential threats and determining the degree of vulnerability of local populations and economic sectors to droughts and how these vulnerabilities vary by region within a country;
 - (b) Evaluating the existing capabilities in the country for the early warning of droughts, identifying gaps and taking appropriate steps to develop and strengthen national capabilities for providing effective early warning of drought;
 - (c) Evaluating existing decision-support tools in close collaboration with the user communities in different sectors impacted by droughts and improving these

- tools by taking advantage of innovations to provide better and more timely information for decision-making;
- (d) Promoting multidisciplinary collaboration among meteorologists, hydrologists, soil scientists, ecologists, agronomists, social/behavioural scientists, health care system experts and others in the collection of data (including meta-data) and the generation of drought products for the user community; and
 - (e) Considering the capabilities of users and policymakers.
23. Assess the current ability to make regional outlooks and forecasts with regard to the duration and severity of drought, build capacities in making these forecasts and enhance communication to users. This involves:
- (a) Encouraging investments to strengthen research capacity at national, regional and local levels into the causes and effects of climate variations and long-term climate prediction to provide early warnings for drought;
 - (b) Collaborating with the Global Producing Centres for Long-range Forecasts and the Regional Climate Centres to boost countries' abilities to provide seasonal, intra-seasonal and inter-annual forecasts and skill indicators for drought outlook and decision-making;
 - (c) Assessing past and current droughts in the context of trends and extreme events that affect the duration and severity of droughts; and
 - (d) Improving capabilities to forecast and develop future drought predictions.
24. Evaluate the four phases of drought risk management: vulnerability and risk assessment; monitoring and early warning systems; preparedness and mitigation; and emergency response and recovery. This involves:
- (a) Establishing an evaluation procedure for each of the four phases;
 - (b) Implementing a feedback process in the drought life cycle to learn from past practices in mitigation and/or prevention, preparedness, response and recovery strategies;
 - (c) Ensuring that early warnings are delivered to decision-makers in a timely fashion and in appropriate formats, and that preparedness, response and recovery plans are in place;
 - (d) Ensuring that drought early warning systems are always functional and incorporate a tiered approach based upon the severity of the event;
 - (e) Developing long-term solutions in addressing recurrent/multi-year droughts; and
 - (f) Identifying appropriate and sector-specific triggers for the timely implementation of mitigation actions.
25. Examine the need for developing useful end products, information or decision-support tools for delivery to the end users. This involves:
- (a) Ensuring that the user community in different sectors impacted by droughts is involved from the outset in the development of useful end products, information and decision-support tools in order to ensure that they meet their needs and expectations;

- (b) Developing appropriate decision-support tools and climatological end products covering all aspects of drought to assist users in their drought risk management decision-making; and
 - (c) Including extension service personnel and boosting their capabilities in understanding and using drought indices to better disseminate information regarding the four phases of drought risk management.
26. Assess the capacity of delivery systems to disseminate data, information, products and services to users in a timely manner to enhance their usefulness in decision-support. This involves:
- (a) Undertaking a review of past and present delivery systems for disseminating drought services to end users and using the review findings and recommendations as the basis for developing user-friendly delivery systems;
 - (b) Establishing a procedure/survey to ensure that the needs of decision-makers are being adequately met by the delivery system and modifying the system as required;
 - (c) Designing data presentation and products to meet the specific needs of various decision-makers (do not make users search through all data but provide access to different products for different groups, e.g. agriculture, education, policymakers);
 - (d) Using the most cost-effective and modern methods for information delivery including Internet, social media (Facebook, Twitter, etc.), social gatherings, mobile phones, radio, TV, etc., which are appropriate to the local conditions; and
 - (e) Placing emphasis on training user communities to use decision-support tools and products.

C. Enhancing preparedness and mitigation actions

27. Develop drought response measures that reinforce the concept of risk management as a key element of an NDMP while promoting environmental stewardship. This involves:
- (a) Emphasizing a fundamental need for an integrated drought monitoring and analysis system;
 - (b) Establishing drought triggers or thresholds for taking action;
 - (c) Differentiating between normal seasonal dry periods and prolonged drought situations in the context of implementing emergency relief and response measures;
 - (d) Continuing the assessment of socioeconomic consequences/impacts of specific drought events;
 - (e) Identifying emergency measures that will reduce the impact of current drought while reducing vulnerability to future occurrences (these measures should, at least, be neutral);
 - (f) Establishing an effective communication and awareness-building strategy for public education;

- (g) Developing a policy to ensure that relief reaches affected communities/sectors in a timely fashion; and
 - (h) Providing a drought fund for relief and response as part of an NDMP.
28. Promote training opportunities to enhance understanding on how seasonal forecasts and decision-support tools can be applied by vulnerable groups and within vulnerable sectors to improve resilience/coping capacities and preparedness. This involves:
- (a) Developing a business (management) plan to carry out training in various sectors;
 - (b) Emphasizing training of trainers (e.g. extension service personnel) to better communicate policy instruments to user communities;
 - (c) Stressing the use of climate risk information in management and policy;
 - (d) Understanding user needs and involving users in developing decision-support tools from the outset; and
 - (e) Employing the media to engage the public and policymakers and receiving feedback on the effectiveness of emergency relief measures.
29. Identify incentives that could be provided to vulnerable sectors/groups to enhance the adoption of risk-based management measures in support of an NDMP. This involves:
- (a) Considering financial incentives (implementation of a government-approved programme to provide loans on a tax-free basis to stimulate the implementation of drought mitigation measures);
 - (b) Linking drought relief to the establishment/implementation of drought plans at any level;
 - (c) Instituting a policy whereby a portion of funds provided for emergency drought relief payments must be directed towards mitigation measures to reduce the impacts of future droughts;
 - (d) Evaluating existing drought insurance plans or schemes in terms of how effectively the plans promote rewarding the wise stewardship of natural resources and sustainable development; and
 - (e) Using rewards for drought preparedness and effective response, and matching funds to finance preparedness plans.
30. Identify and communicate successful examples of how inter-agency or interministerial coordination enhanced drought monitoring, mitigation, response and planning (e.g. US Drought Monitor, North American Drought Monitor, the Australian drought monitor and the State of Ceará in Northeast Brazil, drought and climate monitoring centres).
31. Examine how drought drills or exercises could effectively be used to promote more effective institutional coordination for preparedness and response.
32. Collect local and traditional knowledge and incorporate it into the decision-making process.
33. Ensure connections between science and policy aspects.

D. Implementing emergency response and relief measures that reinforce national drought management policy goals

34. Develop adequate linkages between early warning and relief and response.
35. Carry out rapid assessment of ongoing drought emergencies. This involves:
 - (a) Preparing diagnostic tools for rapid assessments; and
 - (b) Establishing and training inter-agency diagnostic teams (pre-emergency).
36. Conduct research that evaluates the effects of drought relief measures on societal vulnerability. This involves:
 - (a) Identifying case studies at local level on how risk management can reduce vulnerability (i.e. reduce impacts and improve resilience);
 - (b) Diversifying activities and portfolios of assets as a drought mitigation strategy (e.g. in crop production);
 - (c) Assessing the effectiveness of drought policies and looking for areas of improvement and refinement; and
 - (d) Using risk mapping to identify vulnerabilities to help develop appropriate drought policies.

E. Understanding the cost of inaction

37. Document the social, environmental and economic impacts associated with past drought events and impact trends for all levels and sectors.
38. Understand the cost-benefit relationships between a reactive, post-drought impact and emergency relief government policy vs. a risk-based government policy directed towards investment in mitigation actions that reduce impacts and the need for government interventions.
39. Derive opportunity costs involved in translating science into policy action.

F. National drought management policy: the way forward

The challenge that nations face in developing a risk-based NDMP is complex and requires political will and a coordinated approach involving all levels of government and diverse stakeholders who must be engaged in the policy development process. One tool that has been essential in providing guidance in developing drought preparedness and mitigation plans in the United States of America is a 10-step planning process. This step-by-step approach has been modified and provided below as one approach for assisting nations with the national drought policy development process. The terminology from the original 10-step process has been modified slightly to reflect the objective of developing an NDMP vs. a preparedness or mitigation plan as was originally intended.

- Step 1:** *Appoint* an NDMP commission or task force.
- Step 2:** *State* or *define* the goals and objectives of a risk-based NDMP.
- Step 3:** *Seek* stakeholder participation; *define* and *resolve* conflicts between key water-use sectors.
- Step 4:** *Inventory* data and financial resources available and *identify* groups at risk.

Step 5: *Prepare/write* the key tenets of an NDMP, including the following elements:

- Monitoring, early warning and prediction;
- Risk and impact assessment; and
- Mitigation and response.

Step 6: *Identify* research needs and *fill* institutional gaps.

Step 7: *Integrate* the science and policy aspects of drought management.

Step 8: *Publicize* the NDMP and *build* public awareness.

Step 9: *Develop* educational programmes for all age and stakeholder groups.

Step 10: *Evaluate* and *revise* the NDMP.

The tenets of a national drought policy require periodic evaluation and revision in order to incorporate new technologies, lessons learned from recent drought events, changes in vulnerability, and so forth. Nations are advised to complete periodic assessments of their national drought policy, conduct drought exercises to ensure the highest level of coordination between government agencies, ministries and/or non-governmental organizations, and revise or update the policy accordingly.
