Output No.	Output	Key Indicators	Means of Verification	Assumptions/Risks	Action Origin
Project Goal	Reduce Tuvalu's vulnerability to drought and climate change and improve human health and the environment through improving wastewater management in an IWRM framework				
PURPOSE	To save water and protect human health and the environmental through improvements to sanitation systems				
Output No.	Output	Key Indicators	Means of Verification	Assumptions/Risks	Action Origin
COMPONENT 1					
1	National Policy/Legislation Consider the suitability of national policy and legislation framework to enable better wastewater and water management	Necessary changes to national legislation and policies to mainstream integrated water and wastewater management	National legislation and policies	Reliant on co-funded activities; Political will; Capacity to attract/retain suitably qualified personnel	
1.1	Consider the revision of national legislation and policy to address gaps and support opportunities for better water and wastewater management	Necessary changes to national legislation and policies to mainstream integrated water and wastewater management	National legislation and policies	Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Capacity to influence political process; Significant changes in enabling environment, including but not limited to political commitment and financial stability and changes in legislation and policy; capacity to attract/retain suitably qualified personnel	In-country IWRM Team + consideration of consultant
1.1.1	Identify gaps and opportunities for managing water and wastewater in an IWRM framework	Report recommending strategies	Accepted by National Water and Sanitation Steering Committee (NWSSC)	Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Capacity to influence political process; Significant	
1.1.2	Recommendation to amend legislation and policy	Recommendation to relevant ministries and Cabinet	Reports endorsed by Cabinet	changes in enabling environment, including but not limited to political commitment and financial stability;	
1.1.3	Monitor and support recommendations	Interaction accepted	Reports of communications	capacity to attract/retain suitably qualified personnel; Extended period of wet weather reduces	

				stakeholder interest	
1.2	Review Draft Water Act and Water Policy to support implementation of wastewater management	Water Act and Water Policy passed by Parliament	Enactment of legislation and adoption of policy	Reliant on co-funded activities; Political will; Capacity to attract/retain suitably qualified personnel	In-country IWRM Team + consideration of consultant
1.2.1	Identify gaps and opportunities for managing water and wastewater in an IWRM framework	Report recommending strategies	Accepted by NWSSC	Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Capacity to influence	
1.2.2	Draft Legislation and policy	Policy tabled in Cabinet Bill tabled in Parliament	Parliament record	political process; Significant changes in enabling environment, including but not limited to political	
1.2.3	Follow strategy to support progress to adoption	Support for policy tabled in Cabinet and Bill tabled in Parliament	Adoption of Water Act and National water policy	commitment and financial stability; capacity to attract/retain suitably qualified personnel; Extended period of wet weather reduces stakeholder interest	
Output No.	Output	Key Indicators	Means of Verification	Assumptions/Risks	Action Origin
COMPONENT 2	Sound Governance to provide confidence in the transparency, accountability and credibility of decisions	Establishment of the Water and Sanitation Steering Committee, with public accountability and supporting Government agency structures	Cabinet endorsement of NWSSC and Government roles and responsibilities	Political will and an enabling legislative, budget and political environment	
2.1	Reconvene Water and Sanitation Steering Committee, responsible for delivering the National Water and Sanitation Plan, with public accountability	Reconvene of the Water and Sanitation Steering Committee	Cabinet Endorsement	Political will and an enabling legislative, budget and political environment	In-country IWRM Team + NWSSC
2.1.1	Revisit Terms of Reference and Roles and Responsibilities	Terms of Reference Roles and Responsibilities	Cabinet endorsement NWSSC endorsement	Political commitment	
2.1.2	Reconfirm members of Steering Committee	Appointment of NWSSC members	Cabinet endorsement	Members will be appointed based on their capacity to deliver outcomes	
2.1.3	Establish executive support for Steering Committee	Executive support appointed and finance in place	NWSSC endorsement	Capacity to attract and retain suitable candidates; Sustainable funding strategy beyond project	
2.2	Define water and sanitation roles and responsibilities and consider	Statement of agency roles and	Report endorse by Cabinet	Political and government agency	In-country IWRM Team +

	improvements and changes	responsibilities		commitment	Paulson Panapa
2.2.1	Identify options for improving government agency roles in water and wastewater management.	Report to government providing options for improving government administrative arrangements for managing water and wastewater	Cabinet endorsement	Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns	
2.2.2	Define Agency roles and responsibilities	Formal statement of government agency roles and responsibility	Cabinet endorsement		
Output No.	Output	Key Indicators	Means of Verification	Assumptions/Risks	Action Origin
COMPONENT 3	Undertake the development of plans and Strategies, as required, to enhance and direct water and wastewater management.	Need identified	Report to NWSSC	Political commitment; Changes in stakeholder roles, responsibility and focus; Enabling legislative and policy changes are adopted; capacity to attract and retain suitable personnel	
3.1	Undertake water and sanitation planning as required to increase technical, institutional and stakeholder capacity. Planning undertaken through community engagement.	National Water and Sanitation Plan (NWSP)	Cabinet endorsed		In-country IWRM Team + NWSSC
3.1.1	Collect and collate existing information, including that available from ongoing studies, into a report to inform water and sanitation planning	Report on existing information and actions	NWSSC endorsement of report	Recruitment/ retention of suitably skilled personnel; Availability of adequate information to inform the planning process; Risks to individual studies do not compromise the value of the information	
3.1.2	Develop a Draft Water and Sanitation Plan, as required, to direct and manage Tuvalu's water resources and wastewater, including vision, strategy and statement of acceptable levels of risk	Draft NWSP for consultation	NWSSC endorsement of Draft NWSP for consultation	Recruitment/retention of suitably skilled personnel; risks to various individual studies do not compromise the value of the plan	
3.1.3	Consult stakeholders on Draft Water and Sanitation Plan	Consultation report for each island community	NWSSC endorsement of consultation process	Consultation is not undertaken adequately to engage community; Loss of focus through stakeholder	

				focus on minor issues	
3.1.4	Deliver Water and Sanitation Plan	National Water and Sanitation Plan (NWSP)	Cabinet endorsement of NWSP	Political will; Changes in stakeholder roles, responsibility and focus; Enabling legislative and policy changes are adopted; Capacity to attract and retain suitable personnel; Period of good rains may diminish stakeholder concerns	
3.2	Communication Strategy that facilitates information exchange on key issues, outputs and outcomes to key (including vulnerable) stakeholders	Communication Strategy	NWSSC endorsement	Changes in stakeholder roles, responsibilities and focus; A supportive enabling environment, including but not limited to political commitment and financial stability; capacity to attract and retain suitable personnel	In-country IWRM Team + NWSSC
3.2.1	Develop and implement communication strategy in consultation with stakeholders to enable information exchange between all stakeholders, including periodic reviews of the strategy	Communication Strategy Annual Reviews	NWSSC endorsement	Changes in stakeholder roles, responsibilities and focus; A supportive enabling environment, including but not limited to political commitment and financial stability; capacity to attract and retain suitable personnel	
3.2.2	Complete IWP video and circulate	Release of IWP educational video	NWSSC endorsed release	Co-funding remains available; Capacity of personnel to complete video	
3.2.3	Use media to advertise community consultation and invite households for trial sanitation systems, report options and negotiations for sludge treatment, ongoing community feedback on project etc.	Uptake of trial systems	Annual project reporting	Messages are well designed and targeted; Capacity of personnel to develop appropriate material; Conflicting media campaigns may reduce the value	
3.2.4	Record progress of demonstration project on Fongafale and conduct information exchange with selected outer island communities	Extend new innovation to outer islands by project end	End of project report	Limitations in capacity to replicate learnings outside of Funafuti; Poor communication of findings	

3.3	Capacity Building Strategy is developed to increase stakeholder capacity to a level that enables sustainable water and wastewater management and participation from all sectors across government, non-government organisations and the community	Capacity Building Strategy implemented	NWSSC endorsement		In-country IWRM Team + NWSSC
3.3.1	Identify capacity building needs assessment for stakeholders, governance, technical and institutional needs, identifying long-term needs and priority areas for capacity building	Capacity needs assessment	NWSSC endorsement	Assume that assessment is able to be representative of broad stakeholder interests; changing political and stakeholder focus may date the strategy rapidly	
3.3.2	Develop capacity building strategy to address capacity needs across all sectors	Capacity Building Strategy	NWSSC endorsement	Assume that assessment is able to be representative of broad stakeholder interests; changing political and stakeholder focus may date the strategy rapidly	
3.3.3	Implement Capacity Building strategy including annual reviews	Annual reporting identifies needs for lower awareness development, reflecting satisfactory uptake, and increasingly complex capacity development needs	Annual project reporting endorsed by NWSSC	Assume that assessment is able to be representative of broad stakeholder interests; changing political and stakeholder focus may date the strategy rapidly	
3.3.4	Conduct awareness raising sessions and training as necessary on appropriate sanitation systems for Tuvalu, including the consideration of micro-business opportunities (drafting/building services).	Trained 30 people on Fogafale and 15 people on outer islands Construction Complete	NWSSC endorsement of project reporting	Assume availability and commitment of people to be trained; Capacity to develop training course to address a wide level of initial capacity	
3.4	Participation Strategy that facilitates stakeholder participation throughout the planning and implementation phases	Participation Strategy implemented	NWSSC endorsement	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political commitment and financial stability; Capacity to retain up-skilled personnel; Extended periods of rain may diminish stakeholder interest	In-country IWRM Team + NWSSC

3.4.1	Develop participation strategy that facilitates greater stakeholder engagement, including vulnerable stakeholders	Participation Strategy	NWSSC endorsement	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political commitment and financial stability; Capacity to retain up-skilled personnel; Extended periods of rain may diminish stakeholder interest	
3.4.2	Implement participation strategy including annual reviews	80% feedback received from community on preferred sanitation system and 100+ volunteers to trial new or improved systems	Annual project reporting endorsed by NWSSC	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political commitment and financial stability; Capacity to retain up-skilled personnel; Extended periods of rain may diminish stakeholder interest	
3.5	Replication Strategy identifying water and wastewater management needs at a national level, identifying mechanisms for transferring learnings and tools and key policy and financial enabling factors, revised to identify lessons and tools as they become available (Methodology)	Replication Strategy	NWSSC endorsement	Changes in stakeholder roles, responsibilities and focus; Significant changes in enabling environment, including but not limited to political commitment and financial stability; Capacity to retain up-skilled personnel; Extended periods of rain may reduce stakeholder interest	In-country IWRM Team + NWSSC
3.5.1	Develop replication strategy that facilitates uptake of project learnings at island, national and regional levels	Replication Strategy	NWSSC endorsement	Political will; Changes in stakeholder roles, responsibility and focus; Enabling legislative and policy changes are adopted; Capacity to attract and retain suitable personnel; Period of good rains may reduce stakeholder concerns	
3.5.2	Transfer of best practices in water resource protection and conservation to rest of Tuvalu, the Pacific Region and beyond (including annual reviews of learnings)	Extend new innovation to outer islands by project end Report to member countries on project learnings and opportunities for uptake	End of project report	Political will; Changes in stakeholder roles, responsibility and focus; Enabling legislative and policy changes are adopted; Capacity to attract and retain suitable personnel; Period of good rains may diminish stakeholder concerns	

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COMPONENT 4	Review all scientific and other information/data and consider further information needs.	Literature Review (Study reports)	Study report available / NWSSC endorsement	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, and that complex systems can be simplified to provide meaningful results	
4.1	Obtain further relevant information as required	Information applicable and up to date	Undated report available	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, and that complex systems can be simplified to provide meaningful results	In-country IWRM Team + NWSSC
4.1.1	Maintain continuous up to date information on all relevant topics, including but not limited to scientific and social research by National and international NGO's and Government agencies.	Quarterly report on latest information	NWSSC endorsement	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, and that complex systems can be simplified to provide meaningful results	
4.2	Assess current status of Funafuti sanitation and wastewater impacts	Report (Updated data)	NWSSC endorsement	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained and that complex systems can be simplified to provide meaningful results; Suitable personnel can be attracted and retained	In-country IWRM Team + NWSSC
4.2.1	Update statistics on flush toilets with septic tanks; pour flush latrine and no toilets on Fongafale	Study report	NWSSC endorsement	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people	
4.2.2	Update health statistics on waterborne diseases	Study Report	NWSSC endorsement	can be attracted and retained and that complex systems can be simplified to provide meaningful	
4.2.3	Review available water quality information for Fongafale lagoon	Study Report	NWSSC endorsement	results; Suitable personnel can be attracted and retained	

4.2.4	Conduct random surveys of attitudes/perceptions regarding different types of toilets and pollution of marine environment	Survey Report 80% feedback received from community on preferred sanitation system and 100+ volunteers to trial new or improved systems	NWSSC endorsement	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained; Suitable personnel can be attracted and retained; Extended periods of rain may reduce stakeholder interest	
4.2.5	Undertake assessment of groundwater resources	Study Report	NWSSC endorsement	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained and that complex systems can be simplified to provide meaningful results; Suitable personnel can be attracted and retained; Extended periods of rain may reduce stakeholder interest	
4.3	Revisit cost benefit analysis report and update where necessary.	Report with recommendations	NWSSC endorsement	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained and that complex systems can be simplified to provide meaningful results; Suitable personnel can be attracted and retained; Extended periods of rain may reduce stakeholder interest	In-country IWRM Team + NWSSC
4.3.1	Develop appropriate design of dry sanitation system for Tuvalu based on feedback from current CT users, previous trainees and PWD staff	Design Report	NWSSC endorsement of design	Reliant on reliability of outcomes of surveys and studies	
4.3.2	Invite volunteer households to trial composting toilets, improved septic systems	Uptake of 80 trial systems 50% of septic systems improved to functioning standard	NWSSC endorsement of project reporting	Stakeholder perceptions may be difficult to overcome; Political commitment; capacity to identify relevant champions	
4.3.3	Construct minimum of 40 composting toilets in cross section of Fongafale households	40 dry sanitation systems complete during the project within the specified or identified	NWSSC endorsement of project reporting	Stakeholder perceptions may be difficult to overcome; Political commitment; capacity to identify	

		areas		relevant champions	
4.3.4	Evaluate project against socio- economic and physical indicators. Refine design of sanitation systems based on user feedback, operational issues and effective treatment	Study Report	NWSSC endorsement	Political and stakeholder commitment, particularly those with the sanitation systems; Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained and that complex systems can be simplified to provide meaningful results; Extended periods of rain may reduce stakeholder interest	
4.3.5	Develop costed strategy to replicate preferred option	Study Report	NWSSC endorsement of report	Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained and that complex systems can be simplified to provide meaningful results	
4.3.6	Identify further funding mechanisms for further installations (beyond project capacity)	Funding found to implement strategy	NWSSC endorsement of funding source	Capacity to attract external funding or develop self-funding mechanism; Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Significant changes in enabling environment, including but not limited to political commitment and financial stability; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel	
4.3.7	Monitor trial sanitation systems/community response	Study Report with recommendations based on monitoring data and survey 30% reduction in targeted household water use	NWSSC endorsement of study report	Stakeholder commitment; Perception of increased available household water; Drought or high rainfall influencing perceptions	

4.3.8	Report on study, including comparing various building materials to reduce cost and demand on coastal aggregate etc, and local aesthetics re design and materials	Study Report	NWSSC endorsement	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained; Suitable personnel can be attracted and retained; Extended periods of rain may reduce stakeholder interest; Household commitment maintained through trial	
4.4	Undertake a study on improved septic systems or other treatment systems to determine their suitability as a wastewater management solution.	Study Report	NWSSC endorsement	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained and that complex systems can be simplified to provide meaningful results; Suitable personnel can be attracted and retained.	In-country IWRM Team + NWSSC
4.4.1	Review of sludge handling and options for disposal/ treatment	Study Report	NWSSC endorsement	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained and that complex systems can be simplified to provide meaningful results; Suitable personnel can be attracted and retained.	
4.4.2	Review the suitability of the existing septage treatment site	If necessary, obtained land lease agreements by the end of Year 3 of the project	Lease signed	Stakeholder and community support, political will, skilled people can be attracted and retained available land.	
4.4.3	Replace, repair septic systems or provide alternative system at volunteer households	Maximum uptake within project funding	Report endorsed by NWSSC	Stakeholder and community support, homeowners volunteer, skilled people can be attracted and retained.	
4.4.4	Proceed with costed design of preferred option for sludge treatment and negotiate lease of private land if government lease site not acceptable to community	Costed design complete. If necessary, obtained land lease agreements by the end of Year 3 of the project if necessary	NWSSC endorsement of design Lease signed	Stakeholder and regional community support, political will, skilled people can be attracted and retained available land.	

4.4.5	Identify funding mechanism or source	Funding found to implement strategy	NWSSC endorsement of funding source	Capacity to attract external funding or develop self-funding mechanism; Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Capacity to influence political process; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel	
4.4.6	Monitor trial sanitation systems/community response	Study Report with monitoring data informing recommendations	NWSSC endorsement of study report	Adequate resources available, adequately skilled people can be attracted and retained, will of volunteer homes	
Output No.	Output	Key Indicators	Means of Verification	Assumptions/Risks	Action Origin
COMPONENT 5	Develop tools to aid the management of water and wastewater management	Tools developed and being used	NWSSC use of tools	Assumed that sufficient information is obtainable to provide confidence in results, adequate resources available, adequately skilled people can be attracted and retained and that complex systems can be simplified to provide meaningful results; Increased rain may reduce political and stakeholder interest	
5.1	Incorporate regulations guidelines and design of roof catchments, rain storages and sanitation systems in Tuvaluan National Building code.	National Building Code	NWSSC endorsement	Political will and an enabling legislative, budget and political environment. Capacity to enforce. Period of rain may reduce interest; capacity to attract and retain suitable personnel	In-country IWRM Team + NWSSC + consideration of consultant
5.1.1	Present a submission to cabinet, supported by PWD, to gain support for revising and updating the building code legislation and to incorporate regulations, guidelines and design of roof catchments, rain storages, and sanitation systems in	Report provided to cabinet	Cabinet support provided.	Political will and an enabling legislative, budget and political environment. Capacity to enforce. Period of rain may reduce interest; capacity to attract and retain suitable personnel	

	the Tuvalu National Building Code.				
5.1.2	Produce regulations, guidelines and design of roof catchments, rain storages, and sanitation systems for inclusion into the revised Tuvalu National Building Code.	National Building Code	NWSSC endorsement	Political will and an enabling legislative, budget and political environment; Period of rain may reduce interest; capacity to attract and retain suitable personnel	
5.1.3	Follow strategy to support progress to adoption	Building Code tabled in Cabinet	Adoption of Building Code		
5.2	Support development of model and monitoring program to provide reliable information on the status of national rainwater resources (PACC project)	Model Developed and used	NWSSC endorsement and use	Political will and an enabling legislative, budget and political environment; Period of rain may reduce interest; capacity to attract and retain suitable personnel; Capacity to develop reliable model sufficient to inform management	In-country IWRM Team, In- country PACC Team + NWSSC
5.2.1	Support the development of a model and monitoring program to provide reliable information on the status of national rainwater resources	Model Developed	NWSSC endorsement	Political will and an enabling legislative, budget and political environment; Period of rain may reduce interest; capacity to attract and retain suitable personnel; Capacity to develop reliable model sufficient to inform management	
5.2.2	Resource and implement monitoring program	Model used to inform management decisions	Reporting to NWSSC	Political will and an enabling legislative, budget and political environment; Period of rain may reduce interest; capacity to attract and retain suitable personnel	
Output No.	Output	Key Indicators	Means of Verification	Assumptions/Risks	Action Origin

COMPONENT 6	Support all on-ground works to improve water and wastewater management	Support provided	Reports and fundir applications produced.	Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Capacity to influence political process; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel; Increased rain may reduce stakeholder commitment	
6.1	Support improvements to household rainwater collection and storage to reduce drought stress	Support provided	Reports and fundir applications produced.	Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Capacity to influence political process; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel; Increased rain may reduce stakeholder commitment	In-country IWRM Team, In- country PACC Team + NWSSC
6.1.1	Supporting installation of increased guttering and rainwater tanks to improve the capture and retention of rainwater	Support provided	Reports and fundir applications produced.	Reliant on co-funded activities, with associated funding, commitment, integration, resources and timing concerns; Capacity to influence political process; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy; lack of development of enabling policy and legislation; capacity to attract/retain suitably qualified personnel; Increased rain may reduce stakeholder commitment	

Output No.	Output	Key Indicators	Means of Verification	Assumptions/Risks	Action Origin
COMPONENT 7	To successfully deliver the Tuvalu Ecosan Demonstration Project				
7.1	Successfully managed project	Final Project Report	GEF endorsement	Capacity to retain personnel and political and stakeholder momentum through to project completion	Team + Paulson Panapa
7.1.1	Recruit Project Manager	Recruitment of Project Manager	NWSSC endorsement	Capacity to attract/retain appropriate candidates	
7.1.2	Establish Project Management Unit office	Establishment of a Project Management Unit Office	NWSSC endorsement	Available offices	
7.1.3	Identify and clarify stakeholders	Stakeholder list	NWSSC endorsement	Changes to stakeholders throughout the project have the potential to change project focus	
7.1.4	Re-visit project design with stakeholders and refine design and approach where necessary	Agreed Project Design	NWSSC endorsement	Changes in stakeholder representatives or stakeholder politics may cause delays at review stages associated with different positions on issues or learning curves	
7.1.5	Source additional funding to add value to project outcomes	Additional funding obtained	NWSSC endorsement	Assumption that funding is secured prior to project inception. Inability to source additional funding will limit value-added project components	
7.1.6	Manage budgets, deliverables and timelines	Annual Reports	NWSSC endorsement	Further changes to GEF budgets or co-funding may compromise all three components. Risks identified above also likely to impact on budgets, deliverables or timelines	
7.1.7	Complete reporting commitments	Final Project Report	GEF endorsement	Capacity to retain personnel and political and stakeholder momentum through to project completion	