City Resilience Profiling Tool - Data

Context

geographical, historical, climate, population (density, distribution), land use, sub-local and supra-local divisions, green and blue spaces, economy, local government organization, etc.

Indicators

about 400 specific indicators of relevant aspects of the urban system. (e.g. street density, percentage of urban footprint located in hazardous areas, % of households connected to a wastewater network).

Challenges in data collection

- No data sources with detailed information at local level.
- No sharing culture inside local governments and with other stakeholders.
- Accuracy and reliability of information gathered from local sources.

Data sources

- SDG Indicators Database: https://unstats.un.org/sdgs/dataportal/database
- UN Data: https://data.un.org/

```
def config_elements[:schema, :city] = "string"
def config_elements[:schema, :element_code] = "string"
def config_elements[:schema, :component_code] = "string"
def config_elements[:schema, :component_name] = "string"
def config_elements[:syntax, :delim] = ';'
def elements csv = load csv[config elements]
// shocks file definition
def config_shocks[:data] = csv_file_shocks
// shocks file configuration and loading
def config_shocks[:schema, :city] = "string"
def config_shocks[:schema, :group] = "string"
def config_shocks[:schema, :type] = "string"
def config_shocks[:schema, :subtype] = "string"
def config_shocks[:schema, :date] = "string"
def config_shocks[:schema, :people_directly_affected] = "int"
def config_shocks[:schema, :people_indirectly_affected] = "int"
def config_shocks[:schema, :triggered_shock] = "string"
def config_shocks[:schema, :urban_elements] = "string"
def config_shocks[:schema, :casualties] = "int"
```

```
install $\times \text{un-crpt-data-cities}$

\[
\begin{align*}
\text{def csv_file_cities} = \text{"""} \\
\text{city} \\
\text{teresina} \\
\text{dakar} \\
\text{"""}
\end{align*}
```

```
install
                 un-crpt-data-components
   def csv file components = """
   city;element_code;component_code;component_name
   teresina;1;1.1;Urban Form
   teresina;1;1.2;Land Tenure
   teresina;1;1.3;Housing
   teresina;1;1.4;Built Assets
  teresina;2;2.1;Water Resources
   teresina; 2; 2.2; Energy Resources
   teresina;2;2.3;Food Supply Chain
  teresina;2;2.4;Urban Logistics
   teresina;3;3.1;Energy
   teresina;3;3.2;Water
  teresina;3;3.3;Solid Waste
   teresina; 3; 3.4; Telecommunications
   teresina;4;4.1;Urban Mobility
   teresina; 4; 4.2; Inter-regional Mobility
   teresina;5;5.1;Cemeteries and Crematoriums
   teresina;5;5.2;Civil Registration Services
   teresina;5;5.3;Criminal Justice and Law Enforcement
   teresina;5;5.4;Cultural Heritage and Cultural Activities
   teresina;5;5.5; Emergency and rescue services
   teresina; 5; 5.6; Food Inspection and Monitor
   teresina;5;5.7;Diseases Surveillance and Response System
   teresina;5;5.8;Municipal Taxes
   teresina;5;5.9;Public Lighting
   teresina; 6; 6.1; Social Accountability
   teresina;6;6.2;Access to social protection floor for all
   teresina;6;6.3;Access to Basic Social Services
   teresina;7;7.1;Local Economic Structure
   teresina;7;7.2; Fiscal Stability and Municipal Finance
   teresina;7;7.3;Market Connectivity
   teresina;8;8.1;Ecosystem Services
   teresina;8;8.2;Ecological Footprint
   teresina;8;8.3;Biodiversity & Green Infrastructure
   teresina;8;8.4;Environmental Quality
   teresina;3;3.1.1; Energy Supply - Buildings
```

16 ter 16 ter 17 ter 19 ter 20 ter 21 ter 22 ter 23 ter 24 ter 25 ter 26 ter 27 ter 28 ter 30 ter 31 ter 32 ter 4 ter 31 ter 32 ter 4 ter 5 ter 5 ter 6 ter 7 ter 8 ter 18 te

teresina;Initiative;parceria para melhorar mobilidade urbana de Teresina;2020;Approved; teresina; Plan; Camara Brasileira da Industria 4.0 e Mapeamento 4.0; 2019; Approved; National teresina; Plan; Plano nacional de investimentos; 2020; Approved; National; https://tvbrasil.d teresina; Plan; Plano Plurianual 2020-2023 Estado do Piauí; 2020; Approved; Supra-local; http teresina; Plan; Plano Regional de Desenvolvimento do Nordeste (PRDNE); 2019; Approved; Supra teresina; Plan; Plano de Desenvolvimento Econamico Sustentaivel; 2016; Approved; Supra-local teresina; Plan; Camara Brasileira da Industria 4.0 e Mapeamento 4.0; 2019; Approved; Nationa teresina; Policy; Portarias 05/2020 e 07/2020 SEMEST - Banco Popular estabelecem medidas teresina; Policy; LEI N. 4.855, DE 23 DE DEZEMBRO DE 2015. Altera dispositivos da Lei n. teresina; Plan; Plano nacional de investimentos; 2020; Approved; National; https://tvbrasil.e teresina; Plan; Plano de desenvolvimento econamico sustentavel do Piauí; 2016; Approved; Sup teresina; Initiative; COLAB; 2014; Approved; Local; https://app.colab.re/BR/PI/Teresina teresina; Initiative; TransformaGov - Decreto 10.382/2020; 2020; Approved; National; http://w teresina; Initiative; Programa Brasil Eficiente; 2017; Approved; National; http://www.brasile teresina; Initiative; Programa de eficiancia e efetividade nos controles internos orienta teresina; Plan; Plano de Capacitação Municipal (CAF); 2020; Not Approved; Local;; teresina; Plan; Hiring the Open Data Master Plan; 2020; Under development; Local;; teresina;Initiative;Programa Nacional de Apoio a s Micro e Pequenas empresas — Pronampe teresina; Initiative; Commercial and Creative Technology The Commercial and Creative Tech teresina; Initiative; BNDES Cradito Pequenas Empresas; 2020; Approved; National; https://www. teresina;Initiative;Cursos de capacitação profissional ofertados pela Fundação Wall Fer teresina; Policy; Política Nacional de Informatica – LEI N. 7.232, DE 29 DE OUTUBRO DE 19 teresina; Policy; Creates the figure of the Individual Microentrepreneur - MEI LEI COMPLE teresina; Policy; LEI N. 4.853, DE 23 DE DEZEMBRO DE 2015. Dispaµe sobre tratamento difer teresina; Policy; DICE Developing Inclusive and Creative Economies - Programa de Empreend teresina; Policy; Declaration of Economic Freedom Rights; establishes free market guarant teresina;Initiative;The THEch Program came to foster entrepreneurship, innovation and m

install

un-crpt-data-teresina priority matters indicator

def csv_file_priority_matters_indicators = """

city;priority_matter;element_code;component_code;indicator_code;indicator_description;i teresina; Economic Underperformance; 7; 7.1; 7.1.1.1; Industrial diversity using composition teresina; Economic Underperformance; 7; 7.1; 7.1.1.2; Gross City Product (GCP) and GCP per d teresina; Economic Underperformance; 7; 7.1; 7.1.2.2; Total number of business establishment teresina; Economic Underperformance; 7; 7.1; 7.1.2.3; Proportion of total businesses that ca teresina; Economic Underperformance; 7; 7.1; 7.1.3.1; Diversity index for local employment ι teresina; Economic Underperformance; 7; 7.1; 7.1.3.2; Unemployment rate (disaggregate by sex teresina; Economic Underperformance; 7; 7.1; 7.1.3.3; Informal employment rate (Please disag teresina; Economic Underperformance; 7; 7.1; 7.1.3.6; Are worker training and retraining pro teresina; Economic Underperformance; 7; 7.1; 7.1.4.2; Proportion of the households below the teresina; Economic Underperformance; 7; 7.1; 7.1.4.3; Provide GINI Coefficient at the local teresina; Economic Underperformance; 7; 7.2; 7.2.1.2; Proportion of total local government r teresina; Economic Underperformance; 7; 7.2; 7.2.1.3; Trends in own-source revenue (last 5 y teresina; Economic Underperformance; 7; 7.2; 7.2.3; Existence of performance indicators ar teresina; Economic Underperformance; 7; 7.2; 7.3.1.2; Commercial banks per 100 000 inhabitar teresina; Economic Underperformance; 7; 7.3; 7.3.2.1; National Business Freedom measure acco teresina; Economic Underperformance; 7; 7.3; 7.3.2.1.1; Trade Freedom measure; Red

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teresina; Economic Underperformance; 7; 7.3; 7.3.2.3; Currency volatility over the past deca teresina; Economic Underperformance; 7; 7.3; 7.3.2.4; Largest cities located between 200 and teresina; Economic Underperformance; 4; 4.1; 4.1.1.1.1; Percentage of commuting trips — Priv teresina; Economic Underperformance; 4; 4.1; 4.1.1.1.2; Percentage of commuting trips — Sust teresina; Economic Underperformance; 4; 4.1; 4.1.1.1.2; Percentage of commuting trips — Sust teresina; Economic Underperformance; 4; 4.1; 4.1.1.2; Percentage of population using paratra teresina; Economic Underperformance; 4; 4.1; 4.1.3.5.1; Average commuting travel time — Priv teresina; Economic Underperformance; 4; 4.1; 4.1.3.5.2; Average commuting travel time — Publ teresina; Economic Underperformance; 4; 4.1; 4.1.3.5.3; Average commuting travel time — Sust teresina; Economic Underperformance; 4; 4.1; 4.1.4.4; What is the average travel speed on ma
```

install un-crpt-data-teresina_priority_matters_shocks_

def csv_file_priority_matters_shocks_indicators = """

```
city;priority_matter;shock;element_code;component_code;indicator_code;indicator_descripteresina;Economic Underperformance;Pluvial Flood;3;3.2.3;3.2.3.3.1;Percentage of dwelliteresina;Economic Underperformance;Pluvial Flood;3;3.2.3;3.2.3.3.2;What level of disrupteresina;Economic Underperformance;Viral Epidemic & Pandemic Disease;5;5.2;5.2.2.3;Presteresina;Economic Underperformance;Viral Epidemic & Pandemic Disease;5;5.2;5.2.2.4;Existeresina;Economic Underperformance;Viral Epidemic & Pandemic Disease;5;5.2;5.2.2.5;Existeresina;Economic Underperformance;Viral Epidemic & Pandemic Disease;6;6.3.2;6.3.2.1.3;teresina;Economic Underperformance;Viral Epidemic & Pandemic Disease;6;6.3.2;6.3.2.1.4;teresina;Economic Underperformance;Viral Epidemic & Pandemic Disease;6;6.3.2;6.3.2.3.1;teresina;Economic Underperformance;Built Infrastructure Breakdown;1;1.2;1.2.2.1;Percentteresina;Economic Underperformance;Built Infrastructure Breakdown;1;1.2;1.2.2.2;Percentteresina;Economic Underperformance;Built Infrastructure Breakdown;1;1.2;1.2.1.1;Percentteresina;Economic Underperformance;Built Infrastructure Breakdown;1;1.2;1.2.1.1;Percentteresina;Economic Underperformance;Built Infrastructure Breakdown;1;1.2;1.2.1.1;Percent
```



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def csv_file_priority_matters_stakeholders = """
city;organization_1;organization_2;relationship_role
teresina; SEMPLAN; FIEPI; Communicates
teresina; SEMPLAN; AFD; Formal Partnership
teresina; SEMPLAN; World Bank; Formal Partnership
teresina; SEMPLAN; CAF; Formal Partnership
teresina; SEMPLAN; Ministerio da Economia; Legally Engages
teresina; SEMPLAN; NBD; Formal Partnership
teresina; SEMPLAN; BNDES; Formal Partnership
teresina; SEMPLAN; Caixa Economica; Formal Partnership
teresina; SEMPLAN; MDR; Legally Engages
teresina; SEMPLAN; Banco do Brasil; Formal Partnership
teresina; SEMPLAN; UESPI; Communicates
teresina; SEMPLAN; SEMDUH; Formal Partnership
teresina; SEMPLAN; SEMEST; Formal Partnership
teresina; SEMDUH; SINDUSCON; Formal Partnership
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teresina; SEMDUH; SEMDEC; Formal Partnership
teresina; SEMDUH; World Bank; Communicates
teresina; SEMDUH; SEMPLAN; Formal Partnership
teresina; CDL; Ministerio da Economia; Communicates
teresina; CDL; SEMDEC; Formal Partnership
teresina; CDL; SEMEST; Formal Partnership
teresina; SEMEST; SEBRAE; Formal Partnership
teresina; SEMEST; CDL; Formal Partnership
teresina; SEMEST; UFPI; Formal Partnership
teresina; SEMEST; UESPI; Formal Partnership
teresina; SEMEST; IFPI; Formal Partnership
teresina; SEMEST; SEMPLAN; Formal Partnership
teresina; SEMDEC; SINDCOM; Formal Partnership
teresina; SEMDEC; MOVE-PI; Formal Partnership
teresina; SEMDEC; Banco do Brasil; Formal Partnership
teresina; SEMDEC; UFPI; Formal Partnership
teresina; SEMDEC; UESPI; Communicates
teresina; SEMDEC; IFPI; Formal Partnership
teresina; SEMDEC; SEBRAE; Formal Partnership
teresina; SEMDEC; CDL; Formal Partnership
```

install un-crpt-data-teresina_priority_matters_stresses

def csv_file_priority_matters_stresses_indicators = """ city;priority_matter;stress;stressor;element_code;component_code;indicator_code;indicat teresina; Economic Underperformance; Mismanagement of urban metabolism; Solid waste mismar teresina; Economic Underperformance; Mismanagement of urban metabolism; Solid waste mismar teresina; Economic Underperformance; Mismanagement of urban metabolism; Solid waste mismar teresina; Economic Underperformance; Mismanagement of urban metabolism; Solid waste mismar teresina; Economic Underperformance; Mismanagement of urban metabolism; Solid waste mismar teresina; Economic Underperformance; Mismanagement of urban metabolism; Wastewater mismana teresina; Economic Underperformance; Mismanagement of urban metabolism; Wastewater mismana teresina; Economic Underperformance; Mismanagement of urban metabolism; Wastewater mismana teresina; Economic Underperformance; Mismanagement of urban metabolism; Inefficient stormw teresina; Economic Underperformance; Mismanagement of urban metabolism; Inefficient storm teresina; Economic Underperformance; Mismanagement of urban metabolism; Inefficient stormw teresina; Economic Underperformance; Mismanagement of urban metabolism; Inefficient storm teresina; Economic Underperformance; Mismanagement of urban metabolism; Inefficient storm 0.000

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def csv_file_priority_matters = """
city;priority_matter
teresina;Water Cycle Mismanagement
teresina;Ecosystem Imbalance
teresina;Economic Underperformance
"""
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install \$\times \text{un-crpt-data-teresina_shocks}\$ \[\frac{1}{2} \text{ def csv_file_shocks} = \frac{1}{2} \]

city;group;type;subtype;date;people_directly_affected;people_indirectly_affected;trigge teresina; TECHNOLOGICAL; FAILURE OF INFRASTRUCTURE & SERVICES; Built Infrastructure Breakd teresina; NATURAL; FLOOD; Fluvial Flood; 1/1/00;;;;;;;9;9 teresina; NATURAL; FLOOD; Fluvial Flood; 1/1/01;;;;;;;9;9 teresina;NATURAL;FL00D;Pluvial Flood;1/1/09;50;100;Pluvial Flood;Built Environment,Basi teresina; NATURAL; FLOOD; Fluvial Flood; 1/1/10;;;;;;;9;9 teresina; NATURAL; FLOOD; Pluvial Flood; 3/5/12; 0; 60; Bacterial Epidemic & Pandemic Disease; teresina; BIOLOGICAL; INFECTIOUS DISEASES; Viral Epidemic & Pandemic Disease; 5/1/12; 7142; 7 teresina; TECHNOLOGICAL; FAILURE OF INFRASTRUCTURE & SERVICES; Built Infrastructure Breakd teresina; SOCIETAL; SOCIO-ECONOMIC SHOCKS; Financial Crisis; 1/1/15; ;845000; Economic Crisis teresina; SOCIETAL; SOCIO-ECONOMIC SHOCKS; Economic Crisis; 3/1/15; 12000; 36000; Economic Cri teresina; BIOLOGICAL; INFECTIOUS DISEASES; Viral Epidemic & Pandemic Disease; 5/1/16; 333; 84 teresina; ENVIRONMENTAL; AIR POLLUTION; Sudden Pollution of the Air; 10/12/16; 864845; 864845 teresina; NATURAL; WILDFIRE; Forest Fire; 10/12/16; 300; 1000; Sudden Pollution of the Air; Bui teresina; NATURAL; WILDFIRE; Forest Fire; 10/15/17; 800;; Sudden Pollution of the Air; Built E teresina; NATURAL; FLOOD; Pluvial Flood; 3/30/18; 200; 10000; Built Infrastructure Breakdown; E teresina; TECHNOLOGICAL; FAILURE OF INFRASTRUCTURE & SERVICES; Built Infrastructure Breako teresina; ENVIRONMENTAL; WATER-SOIL DEGRADATION; Water Body Degradation; 7/22/18; 300; 50000; teresina; NATURAL; FLOOD; Pluvial Flood; 11/4/18; 20; 320; Bacterial Epidemic & Pandemic Disea teresina; BIOLOGICAL; INFECTIOUS DISEASES; Bacterial Epidemic & Pandemic Disease; 1/1/19;5; teresina; NATURAL; FLOOD; Pluvial Flood; 1/5/19; 9; Political Crisis; Built Environment, Basid teresina; NATURAL; FLOOD; Pluvial Flood; 3/10/19; 5000; 5000; Bacterial Epidemic & Pandemic Di teresina; NATURAL; MASS MOVEMENT; Landslide; 3/15/19; 0; 30; Soil Degradation; Built Environment teresina; NATURAL; MASS MOVEMENT; Landslide; 3/20/19;0;1600; Soil Degradation; Built Environm

```
teresina; NATURAL; FLOOD; Flash Flood; 4/4/19; 200; Sudden Inland Erosion;; 2; 10;;;
teresina; NATURAL; FLOOD; Pluvial Flood; 4/6/19; 500; 5000; Built Environment, Basic Infrastru
teresina; SOCIETAL; SOCIO—SPATIAL SHOCKS; Mass Immigration; 5/12/19; 350; 864845; Financial Cr
teresina; NATURAL; FLOOD; Pluvial Flood; 7/28/19; 1000; 8500; Bacterial Epidemic & Pandemic Di
teresina; ENVIRONMENTAL; WATER—SOIL DEGRADATION; Soil Degradation; 9/18/19; 639; Heat Wave; E
teresina; NATURAL; FLOOD; Pluvial Flood; 1/5/20; 151; Political Crisis; Built Environment, Bas
teresina; TECHNOLOGICAL; FAILURE OF INFRASTRUCTURE & SERVICES; Public Services Breakdown; 3
teresina; BIOLOGICAL; INFECTIOUS DISEASES; Viral Epidemic & Pandemic Disease; 3/15/20; 5054;
teresina; NATURAL; FLOOD; Fluvial Flood; 3/20/20; 150; 150;; Built Environment, Basic Infras
teresina; NATURAL; FLOOD; Pluvial Flood; 3/20/20; 2000; 10000; Built Environment, Basic Infras
teresina; NATURAL; MASS MOVEMENT; Landslide; 4/3/20; 5; 15; Pluvial Flood; Built Environment, Ba
```

```
install
                 un-crpt-data-teresina_stakeholders
   def csv_file_stakeholders = """
   city;organization;description
   teresina; SEMPLAN; Secretaria Municipal de Planejamento e Coordenação
   teresina; SEMDUH; Secretaria Municipal de Desenvolvimento Urbano e Habitação
   teresina; CDL; Câmara de Dirigenes Lojistas de Teresina
   teresina; SEMEST; Secretaria Municipal de Economia Solidaria de Teresina
   teresina; SEMDEC; Secretaria Municipal de Desenvolvimento Econòmico e Turismo
   teresina; SEBRAE; Serviço Brasileiro de Apoio às Micro e Pequenas Empresas
   teresina; FIEPI; Federação das Indústrias do Estado de Piauí
   teresina; Caixa Economica; Caixa Economica
   teresina; IFPI; Instituto Federal de Educação Ciència e Tecnologia do Piauí
   teresina; AFD; French Development Agency
   teresina; CAF; Banco de Desenvolvimento da América Latina
   teresina; Ministerio da Economia; Ministerio da Economia
   teresina; NBD; Novo Banco de Desenvolvimento
   teresina; BNDES; Banco Nacional de Desenvolvimento Econômico e Social
   teresina; MDR; Ministério do Desenvolvimiento Regional
   teresina; Banco do Brasil; Banco do Brasil
   teresina; UESPI; Universidade Estadual do Piauí
   teresina; SINDUSCON; Sindicato da Indústria da Construção Civil de Teresina
   teresina; World Bank; World Bank
   teresina; UFPI; Universidade Federal do Piaui
   teresina; SINDCOM; Sindicato dos Empregados no Comércio de Teresina
   teresina; MOVE-PI; Movimento Empreender Piauí
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```
teresina; Vegetation loss; 8; Ecology
teresina; Urban Heat Islands; 1; Built Environment
teresina; Limited business attractiveness; 7; Economy
teresina; Weak economic diversity; 7; Economy
teresina; Informal economy; 7; Economy
teresina; Reduced productivity; 4; Mobility
```

```
teresina; Water contamination; Environmental pollution
teresina; Soil degradation; Environmental pollution
teresina; Deforestation; Vegetation loss
teresina; Urban vegatation loss; Vegetation loss
teresina; Inadequate green infrastructures and nature based solutions; Vegetation loss
teresina; Inadequate green cover; Urban Heat Islands
teresina; Impermeable surfaces; Urban Heat Islands
teresina; Thermal mass; Urban Heat Islands
teresina; Market disconnectivity; Limited business attractiveness
teresina; National rules and regulations; Limited business attractiveness
teresina; Inefficiency of local public services; Limited business attractiveness
teresina; Limited availability of capital and human resources; Limited business attractive
teresina; Market disconnectivity; Weak economic diversity
teresina; Limited availability of capital and human resources; Weak economic diversity
teresina; Reduced formal job opportunities; Informal economy
teresina; National rules and regulations; Informal economy
teresina; Labour market dynamics; Reduced productivity
teresina; Mismanagement of urban mobility; Reduced productivity
teresina; Inefficient transport networks and supply chains; Reduced productivity
```

install un-crpt-data-teresina_urbanunderperformance_ def csv_file_teresina_urbanunderperformance_shocks_indicators = priority_matter; shock; code; description; value Economic Underperformance; Pluvial Flood; 3.2.3.3.1; Percentage of dwellings damaged by ir Economic Underperformance; Pluvial Flood; 3.2.3.3.2; What level of disruptions on road tra Economic Underperformance; Pluvial Flood; 3.2.3.3; What level of disruption of access to Economic Underperformance; Viral Epidemic & Pandemic Disease; 5.2.2.3; Presence of notifid Economic Underperformance; Viral Epidemic & Pandemic Disease; 5.2.2.4; Existence of early Economic Underperformance; Viral Epidemic & Pandemic Disease; 5.2.2.5; Existence of awarer Economic Underperformance; Viral Epidemic & Pandemic Disease; 6.3.2.1.3; Do local or natid Economic Underperformance; Viral Epidemic & Pandemic Disease; 6.3.2.1.4; Are there protoco Economic Underperformance; Viral Epidemic & Pandemic Disease; 6.3.2.3.1; What level of dis Economic Underperformance; Built Infrastructure Breakdown; 1.2.2.1; Percentage of homes wi Economic Underperformance; Built Infrastructure Breakdown; 1.2.2.2; Percentage of critical Economic Underperformance; Built Infrastructure Breakdown; 1.2.1.1; Percentage of urban fo

10	Economic	Underperformance; Mismanagement	of	urban	<pre>metabolism;Wastewater mismanagement;3.</pre>
12 13	Economic	<pre>Underperformance;Mismanagement</pre>	of	urban	<pre>metabolism;Wastewater mismanagement;3.</pre>
14	Economic	<pre>Underperformance;Mismanagement</pre>	of	urban	<pre>metabolism;Wastewater mismanagement;3.</pre>
15 16	Economic	<pre>Underperformance;Mismanagement</pre>	of	urban	metabolism; Inefficient stormwater solu
10	Economic	<pre>Underperformance;Mismanagement</pre>	of	urban	metabolism; Inefficient stormwater solu
	Economic	<pre>Underperformance;Mismanagement</pre>	of	urban	metabolism; Inefficient stormwater solu
	Economic	<pre>Underperformance; Mismanagement</pre>	of	urban	metabolism; Inefficient stormwater solu
	Economic	Underperformance; Mismanagement	of	urban	metabolism; Inefficient stormwater solu
	0.00				