

Global Water Tool Version 2015

IT support - proxy and/or firewall settings May 2015

The 2015 version of the Global Water Tool remains Excel-based (using VBA) and includes a workbook (inventory by site, key reporting indicators, metrics calculations), a mapping function to plot sites with datasets, and Google Earth interface for spatial viewing.

No personal data is stored on servers – it's stored locally on users' devices.

External datasets and geopositioning algorithms to associate sites' locations to geographical indicators (such as the Water Stress Index) and provide watershed-level information are stored partly within the tool, partly to WBCSD ArcGIS online server.

User requirements

- MS Excel 2003 and above
- Internet Explorer 10 (or higher) and Google Earth (pro-version for commercial use) installed in order to use the mapping application and to view the sites spatially.
 - Maps are generated on ArcGisformat -ArcGisdata is best supported by Internet Explorer 10, other browsers might display partial results.
 - This version of the tool automatically locates Google Earth in the right folder.
- Firewall and security settings for Internet must recognize WBCSD Global Water Tool as a trusted source. In order to avoid issues to display the maps and Watershed report, users may in some cases have to add an exception on their firewall (when only specific URLs are permitted inside the company's network) or to configure their proxy settings.

URLs used by GWT:

- <http://gwt.wbcسدservers.org> (online maps)
- <http://54.169.49.193> (watershed report - no domain name associated)

Instructions for proxy configuration: <https://support.microsoft.com/en-us/kb/289481>

- Windows must be set up in English (US). Go to "Control Panel"; region and language, and in "Formats" select English (United States)

Details on WBCSD ArcGIS online server

Coordinates of each site, together with its name and operation type (where applicable) are transmitted via http requests to WBCSD ArcGIS online server, to build the online map and retrieve information related to the geographical area the site is located in. Site's longitude and latitude are

inputted to a SOE (Server Object Extension, a business logic wrapper written in C# and compiled along with server's itself routines) that calculates which polygon the site belongs to. For this polygon, appropriate data are read from datasets and returned as the output. The output (a JSON-encoded http response) is parsed by a VBA routine running inside GWT 2015 environment and the decoded data is written to corresponding worksheets.

Function httpPost executes remote calls:

```
Public Function httpPost(fn As String, _
    Optional data As String = vbNullString, Optional isjson As Boolean = False, _
    Optional authHeader As String = vbNullString, _
    Optional additionalHeaders As Object = Nothing, _
    Optional method As String = "POST") As String

    pHtml = fn
    Dim v As Variant, ohttp As MSXML2.ServerXMLHTTP60

    Set ohttp = New MSXML2.ServerXMLHTTP60
    With ohttp
        .setOption 2, .getOption(2) - SXH_SERVER_CERT_IGNORE_CERT_DATE_INVALID
        .Open method, pHtml, False
        If isjson Then
            .SetRequestHeader "Content-Type", "application/json"
        Else
            .SetRequestHeader "Content-Type", "application/x-www-form-urlencoded"
        End If
        If (authHeader <> vbNullString) Then
            ohttp.SetRequestHeader "Content-Type", "application/x-www-form-urlencoded"
            ohttp.SetRequestHeader "Authorization", authHeader
        End If
        extraHeaders ohttp, additionalHeaders
        'Debug.Print method, pHtml
        ohttp.Send data
        storeStuff ohttp
    End With

    httpPost = pText
    Set ohttp = Nothing
End Function
```

Remote calls are executed by an object called ServerXMLHTTP60, belonging to msxml6.dll (as in project's "references"). Serverxmlhttp60 relies internally on WinHttp, the current standard Microsoft http client stack. Data are transmitted over HTTP (port 80) in a reliable and secure way, permitting to bypass usual firewall limitations.