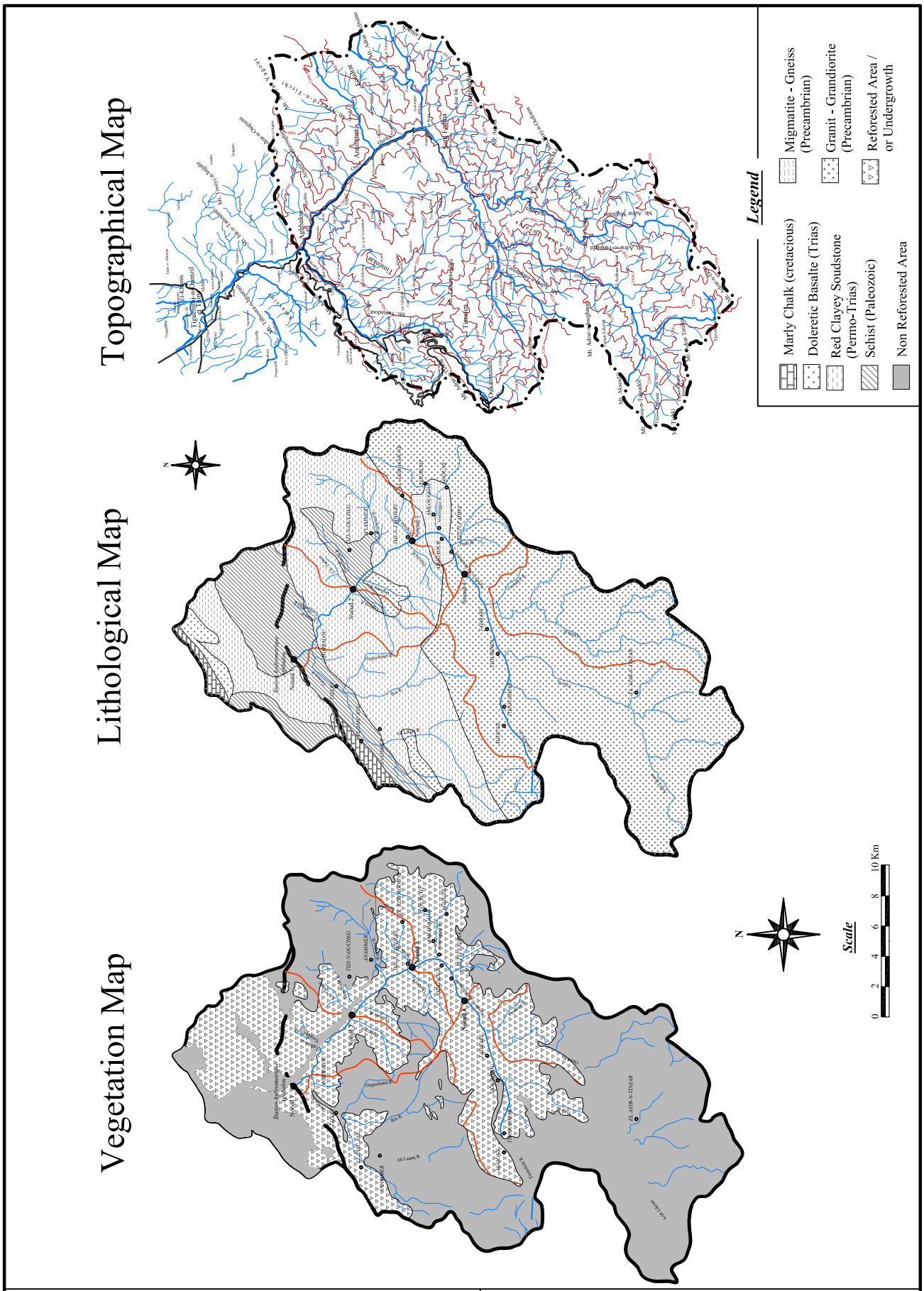
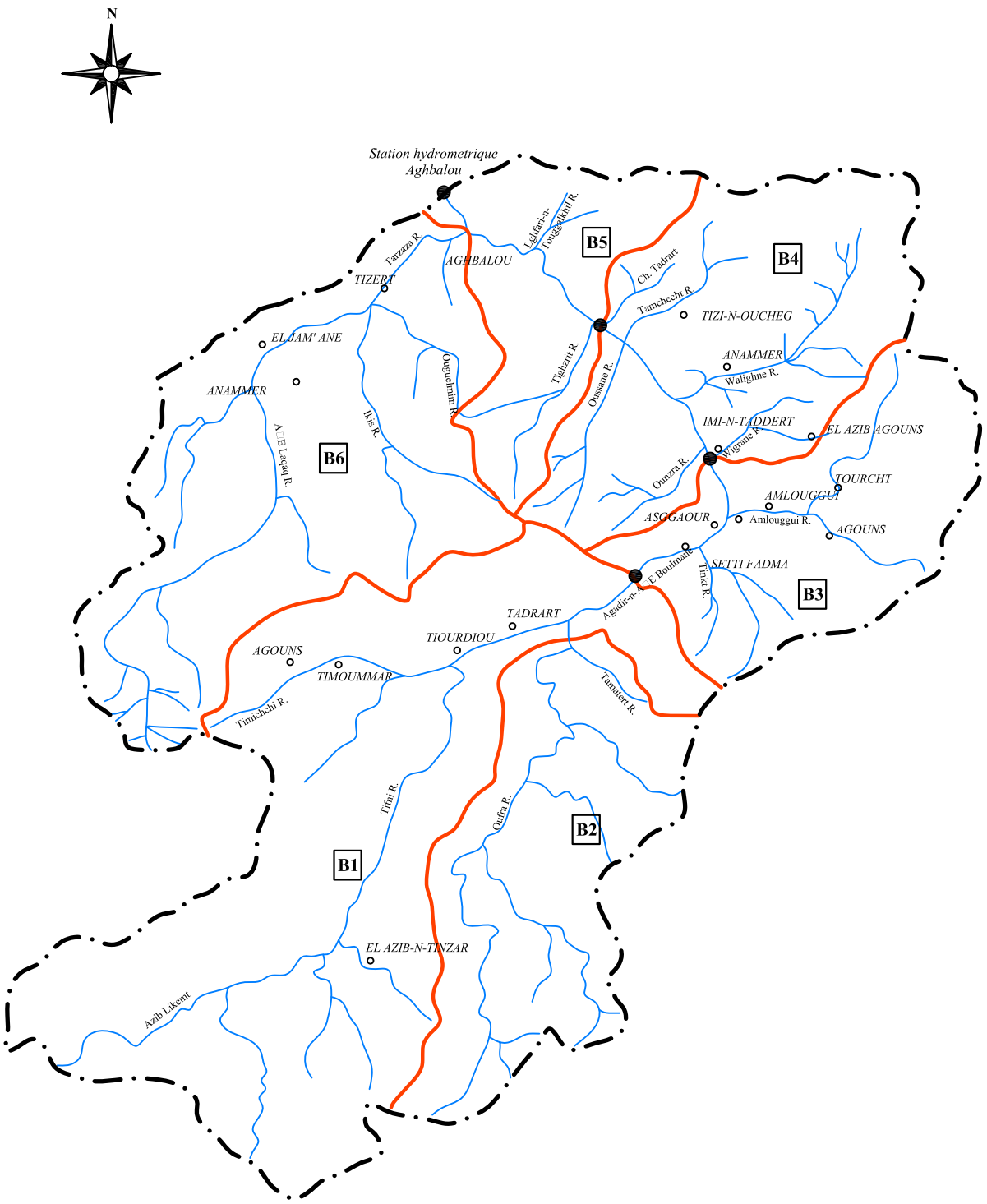


THE MASTER PLAN STUDY ON

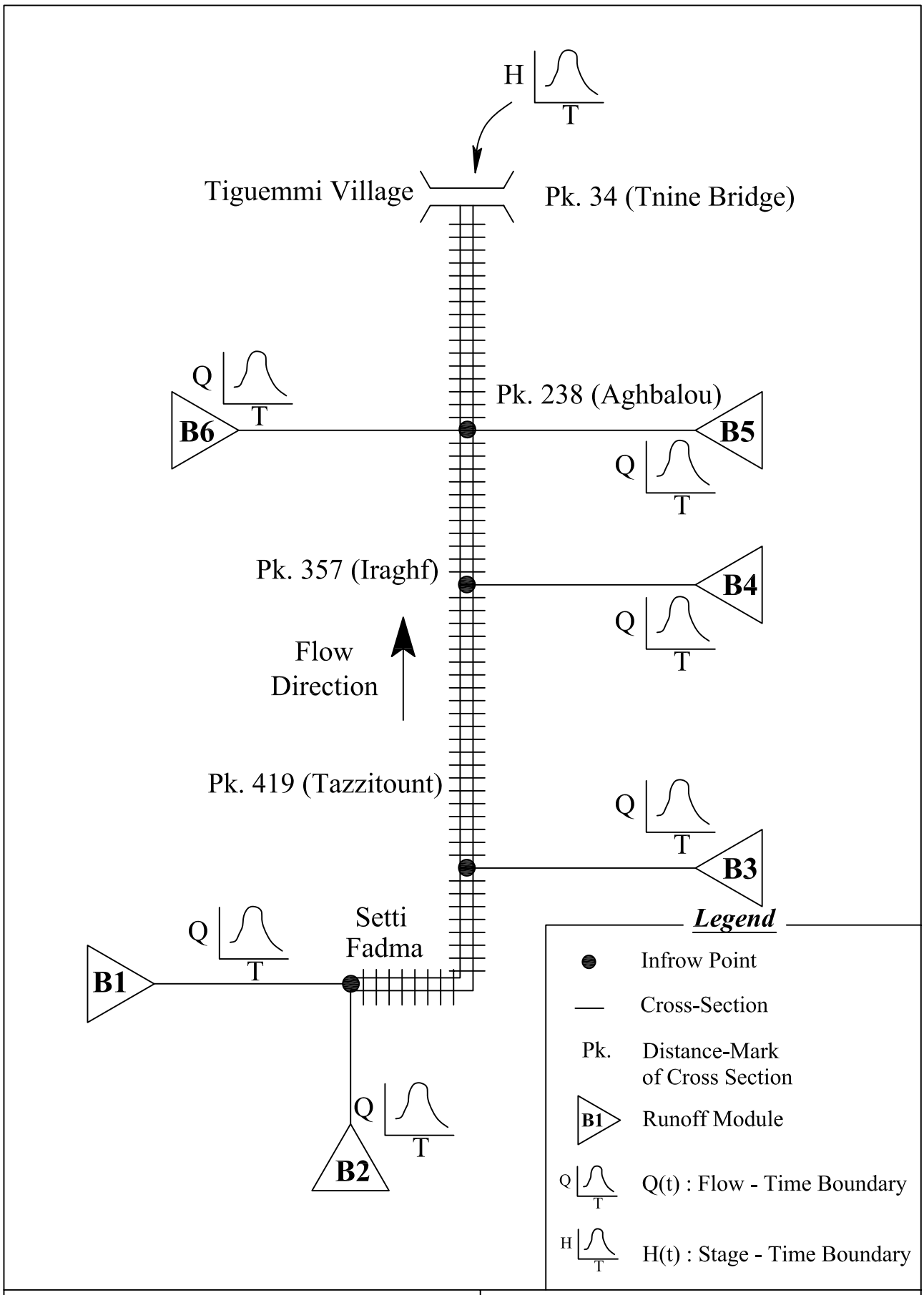
FLOOD FORECASTING AND WARNING SYSTEM

FOR ATLAS REGION IN THE KINGDOM OF MOROCCO

Fig. 3.2.5 TOPOGRAPHICAL, LITHOLOGICAL AND VEGETATION MAP

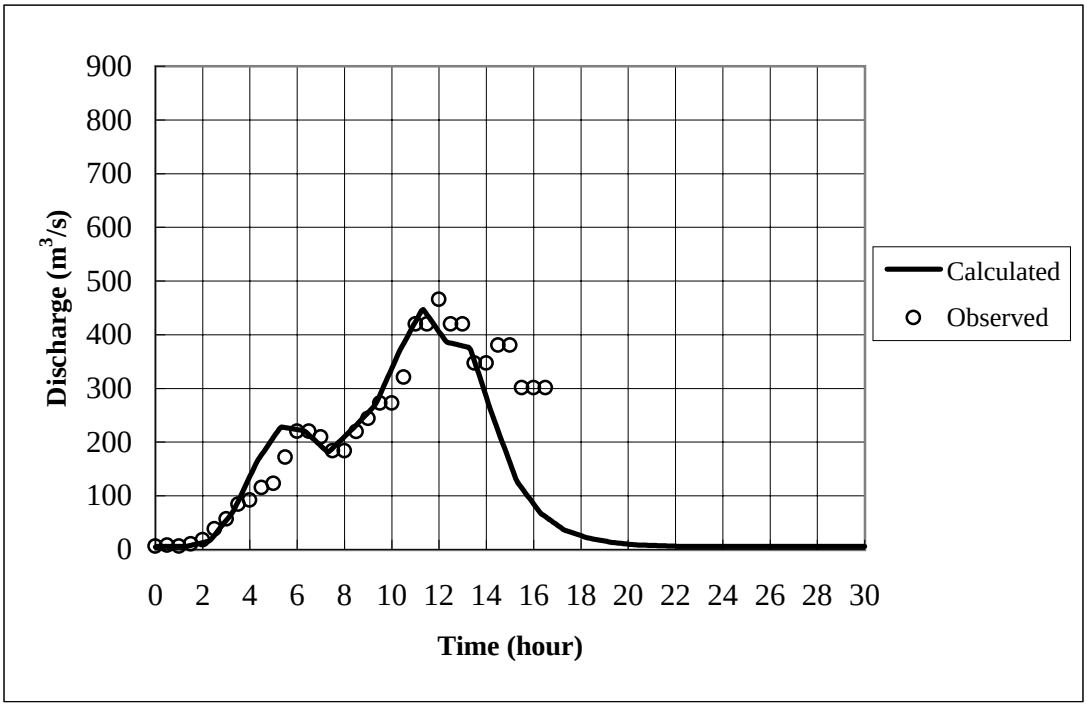


THE MASTER PLAN STUDY ON FLOOD FORECASTING AND WARNING SYSTEM FOR ATLAS REGION IN THE KINGDOM OF MOROCCO	Fig. 3.2.6 SUB-BASIN DIVISION FOR RUNOFF SIMULATION

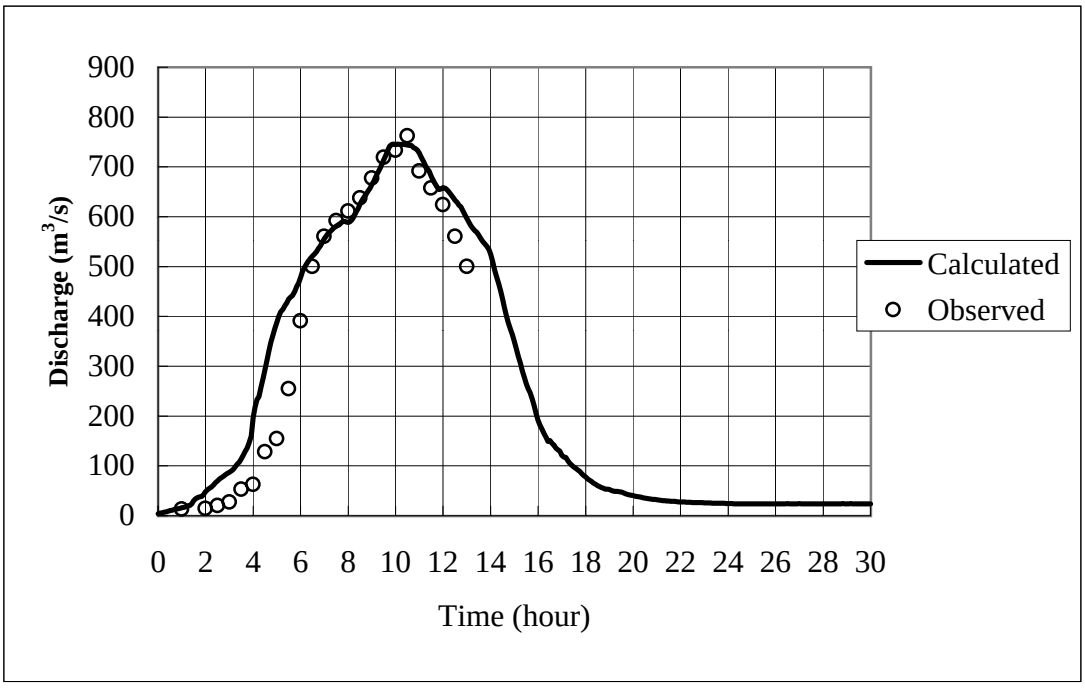


THE MASTER PLAN STUDY ON FLOOD FORECASTING AND WARNING SYSTEM FOR ATLAS REGION IN THE KINGDOM OF MOROCCO	Fig. 3.2.7 SCHEMATIC DIAGRAM OF HYDRODYNAMIC SIMULATION MODEL

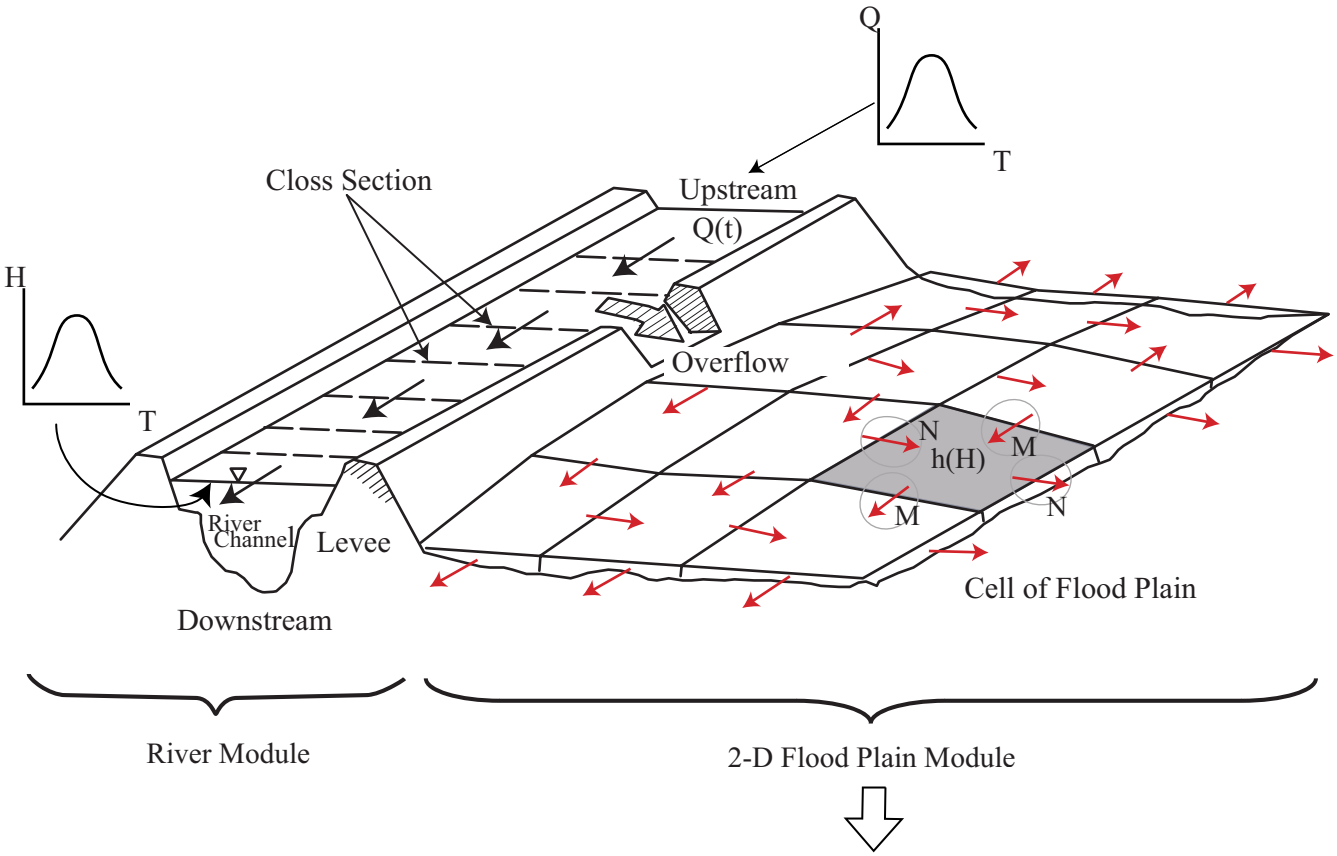
Tiourdiou



Aghbalou



THE MASTER PLAN STUDY ON FLOOD FORECASTING AND WARNING SYSTEM FOR ATLAS REGION IN THE KINGDOM OF MOROCCO	**Fig. 3.2.8 CALIBRATION RESULT**



Continuity Equation

$$\frac{\partial h}{\partial t} \quad \frac{\partial M}{\partial x} + \frac{\partial N}{\partial y} = 0$$

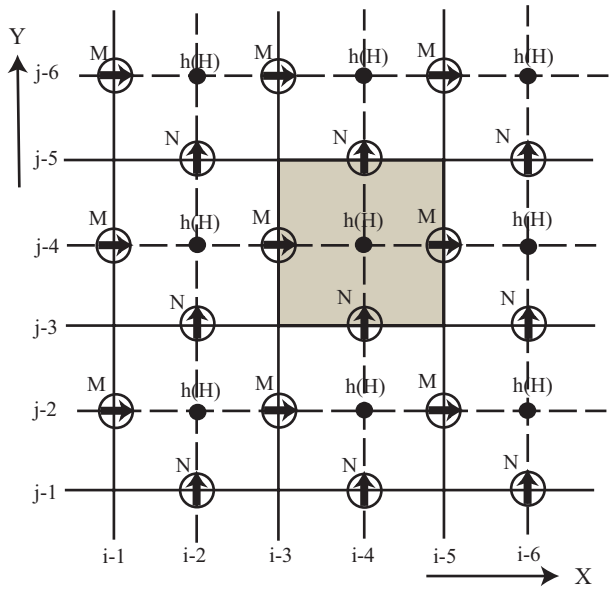
Momentum Equation

$$\frac{\partial M}{\partial t} + \frac{\partial uM}{\partial x} + \frac{\partial vM}{\partial y} + gh\frac{\partial H}{\partial} + \frac{1}{\rho}\tau_x(b) = 0$$

$$\frac{\partial N}{\partial t} + \frac{\partial uN}{\partial x} + \frac{\partial vN}{\partial y} + gh\frac{\partial H}{\partial y} + \frac{1}{\rho}\tau_y(b) = 0$$

Where

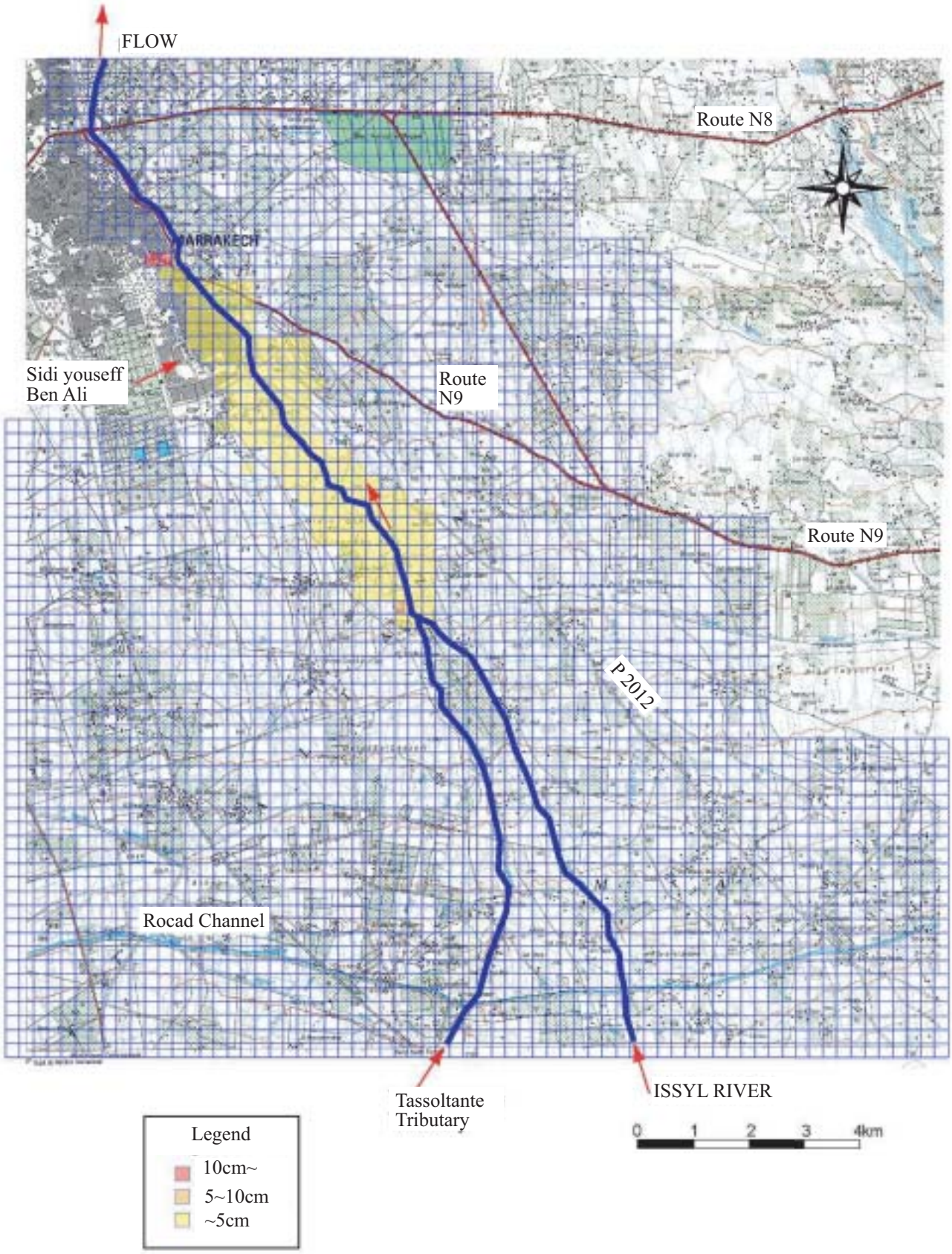
- H,h : Water Level, Water depth
- u,v : Velocity of X,Y Direction
- g : Acceleration due to Gravity
- ρ : Density of Water
- M,N : Discharge Flux (M=uh , N=vh)
- $\tau_x(b)$, $\tau_y(b)$: Shearing Stress



Legend

h	Water depth
H	Water Level
M	Discharge flux to X direction
N	Discharge flux to Y direction
Q	Discharge
T	Time

THE MASTER PLAN STUDTY ON FLOOD FORECASTING AND WARNING SYSTEM FOR ATLAS REGION IN KINGDOM OF MOROCCO	Fig.3.2.9 SCHEMATIC DIAGRAM OF SIMULATION MODEL FOR ISSYL RIVER



THE MASTER PLAN STUDY ON FLOOD FORECASTING AND WARNING SYSTEM FOR ATLAS REGION IN THE KINGDOM OF MOROCCO	Fig. 3.2.10 SIMULATION RESULT FOR ISSYL RIVER (PEAK DISCHARGE = 90 m^3/s)